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Editorial

PRESENT DAY MEDICAL EDUCATION A FARCE—THE QUESTION OF MEDICAL SERVICE FOR ORDINARY PEOPLE IS THE BIGGEST PROBLEM WE HAVE

From all sides comes a plea for that change in medical education which will refill the rapidly depleting ranks of general practitioners.

The laboratory and the supertrained theorist should have been displaced long since for clinical medicine and the health needs of a large and suffering people.

Twenty-five years ago, the Council on Medical Education of the A. M. A., stepped in and rescued medical teaching from a disorganized state that was next door to chaos, and arranged this vital element of civilization in an orderly efficient condition. Minimum requirements were raised and teaching standardized. Upon this sound basis was built American medical supremacy. But it has had one backfire and that a bad one.

For product of this supersystem seems to be more on the qui vive for the theory of medical practice, rather than for medical practice, itself. Everywhere there is a sufficiency of the most able specialists of which civilization has ever dreamed, but there is a most unfortunate paucity of ordinary men who are willing to get out and take care of ordinary people in ordinary places. And these ordinary people in ordinary places constitute at least half of the country's population.

It is in this regard that Dr. W. A. Pusey says: "The question of medical service for ordinary people is the biggest problem we have."

A large part of this problem comes under the sectionalization—"Rural," in accordance with the classification by the U. S. Census Bureau of population in places of 2,500 or less. Since much of this rural population is within easy access of cities, and can secure medical attention

from centers of population, it is probably only about half of the rural population, or about 26,000,000 people who fall into that section of physicianless residents.

In twenty-five years schools have been reduced fifty per cent. in number and while the places for study have been thus reduced, the requirements for entrance and their post entrance demands have increased about 200 per cent. The cost of medical education today is prohibitive, productive of specialists and barren, comparatively speaking of "general men."

As the general medical practitioners pass out in the routine of time they are not being replaced.

There is a general understanding that the medical students eveywhere are led to believe and are encouraged to feel that the pathological and allied laboratories are of transcendent importance. Further that dignified medical students, while yet undergraduates, consider that the only proper place in which to practice medicine is inside or at least within the shadow of a Class A hospital.

As a result look at the situation throughout the country. A physician's worth is measured by the capability and extent of his community service. The keynote of the profession is sacrifice. Its monetary rewards are laughable in the face of the immeasurable benefits conferred upon humanity. The discoverer of insulin has been allowed by his government a life annuity of $7,500, or a sum that is only a moderate interest on $150,000. Yet the inventor of a method of autographing films as pictures are taken receives, so the information comes, $200,000 for his patent rights. Walter Reed, the discoverer of the means of transmission of yellow fever, died with the knowledge that the future of his family was not provided for. Yet look at the profits made by bootleggers, and by manufacturers of cheap automobiles. Yes, the men of medicine learned long since that a synonym for their profession is "sacrifice." There is little but spiritual good to be gained in many instances from the faithful practice of this great profession. But it is because so many pioneer physicians of America had this steadfast gift of vision that medicine in America leads medicine throughout the world.

Is the light of the lamp of their idealistic altruism and human service to flicker and fade? Certain figures would seem so to indicate. It costs so much now to be a doctor that a man has to be a specialist in order to make a living and as a result the country is flooded with so many specialists and swept free from so many general men that the situation is partaking of the element of the absurd. At the rate we are going it will not be very many years before the aggregation of specialists called into attend a case of typhoid fever will register a man for every organ, and every member, and every system involved in the human body.

Where will the citizenry find the money to pay these men? The citizenry won't. For by that time the citizenry will all be dead or dying as a result of conversion to the quacks and charlatans, keen enough to step in and take advantage of the tasks done by the former ranks of general practitioners and neglected now by the cohorts of specialists.

The fundamental error lies in the expense and extension of the years of medical education. Without in any way lowering the minimum standards for entrance into the profession there could be some feasible system of a short general course evolved so that a man with a working knowledge of general medicine could be sent out to keep well and to heal some of the people in the physician barren communities. Take for instance New York State where it has been found that there are areas of several hundred square miles without one single resident physician and with a population of from 1,500 people upwards. Or in Wisconsin where one county with a population of 3,646 has one physician, and another, with 19,462 has three. Or in West Virginia with six doctors, three of whom are past seventy years of age in attendance upon 11,713 people. Or in Vermont, where out of 248 towns there was 102 without physicians. Or in Tennessee, where there are counties of from 7,000 to 8,000 people with not more than four doctors. In York County, Pennsylvania, there are 37 physicians to serve a rural population of 100,000. North Carolina says it has fewer physicians than any other state in the union, with possibly one or two exceptions.

In Montana, a bonus of $100 per month offered by one county has not attracted a single physician. Louisiana has a county where the ratio of physicians to patients is one to 1,385, and in the state of New Mexico the ratio of phy-

sicians to population is 1 to 2,000, and in Mississippi it is 1 to 1,120, and there are many counties with a population of from 20,000 to 30,000 where the physicians are only in the large centers, leaving the interior without a single resident physician. In Sussex County, New Jersey, where from one to two physicians formerly lived there are now none. In Washington, no physicians in the rural counties have been in practice for less than ten years, and in a few counties there is an absolute absence of medical service. In one West Virginia county of 9,600 population the five physicians have been in practice from twelve to thirty-three years. In Kansas, of twelve counties with twenty physicians, only one is a recent gradute.

Obviously there is need for some movement that will tend to make recent graduates seek practice outside of the large centers of population. The keynote would seem to lie in the minimized general course that could be obtained at from $2,000 upward instead of the present supertraining that must cost from $10,000 upward.

The universal tendency of physicians to abandon rural districts for city practice has left country practice principally in the hands of old men. The galled horse seems to have balked at last!

One reason for this is that medical education and medical service as they are effected in America today are so expensive, first to obtain and second to give, that the rural communities can not afford to pay what the supertrained physician has to give. The solution would seem to lie in a quota of less expensively trained but comparatively adequate medical service to meet this problem, with the understanding that a medical man's education shall not cease with his obtaining of his diploma but that it shall continue at later intervals.

The pivot of this supertraining lies in the preliminary training demanded of physicians. The question at issue would seem to be the dispensing with the four years of collegiate study and permitting men with thorough high school training to commence the study of medicine. This would eliminate one of the factors in the excessive cost of medical education, yet a factor whose influence is in accordance with the experience of the simplest economic and social principles. Not all men need take this foreshortened course. But unless some action of this sort is taken the practice of medicine will continue to be what it has become, a luxury for the wealthy. Seven years of technical training means seven years out of the ablest period of a man's life. It means, too, surrounding a young man, at his impressionable period with too much environment and not enough humanity.

As has been said wisely enough in an editorial in *The Saturday Evening Post:* "The real pest among reputable physicians is the young man who expects his patients to pay for his needlessly high overhead expenses. He may be known by his spacious and elaborate offices and waiting rooms, buttoned door boys, sleek secretaries, fluttering office nurses, and powder monkeys of both sexes, and an all pervading shimmer of white enamel mechanical novelties and glittering metal work. Not infrequently the young practitioner who indulges in all these fripperies is trying to put over a poor piece by means of costly stage effects. He sometimes forgets and his patients still oftener fail to realize that what he has for sale resides in his own cranium and that mere style, atmosphere and scenery are poor substitutes for knowledge, experience and technical proficiency."

In epitomizing the situation it is well, further, to quote Flexner: "The question is not merely to define the ideal training of the physician: it is just as much at this particular juncture, to strike the solution that, economic and social factors being what they are, will distribute as widely as possible the best type of physician so distributable."

A FEW DETAILS OF SERVICE BY THE LAY EDUCATION COMMITTEE TO MARCH 1, 1925

The Speakers' Bureau has supplied 219 medical speakers to lay organizations in Illinois. Material was furnished by the Lay Education committee and traveling expenses paid for about one-third of the number. Approximately two-thirds of the volunteers donated both time and expense.

Moving picture films on health subjects have been supplied to 97 audiences.

Letter campaigns for the periodical health examination have been handled for sixty-six individual physicians and organizations of physicians.

Three hundred and five newspapers have used some form of press release built around news

activities, not academic instruction or propaganda.

Twenty-four radio talks have been given from three stations in Chicago.

Contacts have been made and working agreements entered into with fourteen organizations doing state-wide volunteer health work in Illinois. These working agreements provide flexibility in adapting health education to the needs of the county medical society and the practicing physician.

Successful Health Conference, with a full program of competent medical speakers have been given in conjunction with the Illinois Federation of Woman's Clubs at Urbana and East St. Louis. An All-Community Health Pageant will be given in Chicago on March 13 and 14, with the cooperation of the Chicago Dental Society, the Chicago Retail Druggists Association, the Chicago Health Department and the State Department of Health. More than 5,000 advance tickets have already been reserved.

Conferences with the Illinois Association of Graduate Nurses have been held at Alton and Rock Island.

Forty-three counties have been visited and some form of community educational work established in thirty-nine. 187 medical societies, meetings and committees have been attended and addressed by the director. Forty-one lay audiences have been addressed on the general subject of co-operation with the medical profession.

Assistance has been given in the organization of five woman's auxiliaries. More than 800 physicians have been personally interviewed for material and advice on Lay Education. Exhibits have been organized for thirteen school and community affairs. Every committee of the state council has in some way made use of the Lay Education department.

The work has barely begun, but it has begun to show concrete returns in co-operation from lay groups. It must be personalized and carried through to the point of service to every individual member of this society, as well as the broader interests of the medical profession.

DO YOU WANT THIS WORK TO GO ON?

WILL YOU HELP?

Write to the Lay Education Committee
25 East Washington Street,
Chicago.

DO CROWDED CENTRAL MARTS CONSTITUTE A MENACE TO PUBLIC HEALTH?

Competent authorities question the advisability of central shopping centers with consequent over-crowding, promiscuous assemblage and tendency to disseminate germs of disease. The medical profession has been asked to endorse a discontinuance of this custom.

Possibly large assemblages, including people from all parts of a community may be material factor in the distribution of infection. But the matter is of such far reaching importance, and has so many and such various contiguities that it should be studied from all sides.

There is an element of dubiousness in the proposed inauguration of a campaign for people to trade at the stores in their immediate vicinities instead of the central marts, such as Chicago's congested loop district with practically every nationality under the sun, and every germ in the list, finding continuous representation in the throngs that swarm through the trillion dollar shopping district. Less crowded, smaller, and less promiscuously patronized neighborhood stores might, it is true, be effected in minimizing one of the real menaces to individual and to community health."

Before the medical profession complies with this suggestion of endorsing a campaign, to "Trade away from congested centers." Careful and unprejudiced consideration of the matter must be the fore-runner of any organized movement.

It will be of moment and interest to have an expression of opinion in this regard, from our readers.

SHALL WE CONTINUE TO CENTRALIZE MATTERS IN WASHINGTON?

"Were we directed from Washington when to sow, and when to reap, we should soon want bread." —*Thomas Jefferson.*

LEE S. OVERMAN
Junior Senator from North Carolina.

The last general election was won without regard to issues, but solely upon what the people believed to be the qualifications of one man.

Early in the campaign, Republican politicians realized that they could not hope to go before the people on a Republican record. Hence, the

cry arose—"Coolidge is the issue." No other claim must be made, and none other was.

There can be no mistake that a great majority of the nation gave Mr. Coolidge a most solemn mandate. In the minds of the voters, he was divorced from his party to begin with. It was Coolidge that was returned to the Presidency; there was no mandate to the Republican politicians. Therefore, Mr. Coolidge's responsibility is exceedingly great.

THE PARLOR "PINKS"

But the recent election demonstrated another matter of vital national importance, and that is, the lack of confidence the people expressed in political parties as such.

Why this lessening of respect for the old-line parties? The situation indicates that there must be a need of house cleaning within party ranks. It indicates further that parties have been drifting away from fundamental principles that have always captured the affection of the masses.

I shall not attempt to say much in this article about the Republican party, but will point out briefly just a few things that I believe we Democrats could ponder over with a great deal of profit to ourselves.

In the first place, the Democratic party should firmly resolve that its age-long policy of thorough Americanism should be strictly adhered to. It should take a thorough stock of itself and stand against the siren calls of the parlor "pinks" —be they masculine or feminine—that have been so perniciously active in the United States for the last few years.

Let there be no confusion about this statement. There is ample room in the Democratic party for wholesome, progressive, American ideas. The progressive legislation passed during the first Wilson Administration fully evidenced the fact that the Democratic party is a progressive party —progressive in the sense that it responds to the will and needs of the American people in a sane and judicious manner. There is a great deal of difference between such a policy and being captivated (or browbeaten) into support of measures that have originated under influences entirely un-American, measures that are not only unsuited to American needs but are fraught with great danger.

MORE GOVERNMENT AT HOME

Let me illustrate by briefly referring to the proposed amendment to the Constitution known as the Child Labor Amendment. This amendment proposes "to limit, regulate or prohibit the labor of all persons under eighteen years of age." At present this power resides in the respective states and this amendment undertakes to transfer such power to the Federal Government. It will be noted that, in reality, *this amendment is not a child labor amendment,* but might more properly be called *a "child control"* amendment. It is most general in its scope and is probably the greatest grant of power that has ever been proposed for any general government in the same number of words.

It does not attempt to regulate the employers of children under eighteen years of age, the conditions under which they shall work, but it seeks, rather, to control the child and any manner of work in which he might become engaged, whether with or without compensation.

There is convincing evidence that this idea originated in Russia during the Bolshevik régime and has been transplanted in America. Congress seemed to handle the matter rather gingerly and evidently thought it must pass some such measure before the election, and, therefore, "passed the buck" to the states. It is fervently to be hoped that the respective legislatures will fully understand the import of this proposition before they come to a vote on it. But to begin with, legislators will have to make up their minds to steel their hearts against wily propaganda and clever lobbying. No stone will be left unturned to force this monstrosity upon the American people.

Such legislation as this can well be left to the several states. North Carolina has already refused to ratify. North Carolina also boasts of an excellent child labor law and it had my support in its passage and I take pride in its enforcement.

But here is where the Democratic party comes in:

The Democratic party was born the champion of States' Rights. We have had periods in our history when we have wandered away, and we occasionally have cause to think over "a frequent recurrence to fundamental principles."

One of the greatest causes of unsatisfactory

conditions in the United States is the fact that we have wandered away from the principles of States' Rights. We should get the idea into our minds that we need *a little more government at home and a little less in Washington.* Thomas Jefferson never uttered a truer saying than that

"It is not by the consolidation, or concentration of powers, but by their distribution, that good government is effected."

Concentration of power will inevitably result in abuse of that power to some extent.

There has been far too great a tendency to pass on to Washington disagreeable tasks and asking the general government to find the solution. We need some good old-fashioned home-grown Democracy in America today, the spirit that will move people to look around home a little and see if they cannot do some of their own governing.

There is no safe basis for judging just how far this concentration of power and government at Washington will go. Even now we are confronted with a proposition regarding education that will, if heeded by Congress, finally result in the nationalization of our public school system. If there is anyone who doubts that the respective states of this Union are sufficiently able to take care of the education of their children and provide adequate public school facilities, I invite such individual to visit my native state and there see the rapid progress North Carolina has made in her public school system within the last decade. Today the Old North State has a public school system of which any commonwealth could be proud. It is growing and improving, and we intend to be second to none in these great United States. And it is doubtful if we now are. But we would never have made the progress we have if we had depended on Washington.

TOO MANY LAWS

Nationalize! Centralize! These seem to be the slogans of individuals who do not understand what the fundamental American system is, and who would like to change our system after a foreign pattern. Why we fought the Revolution to escape a concentration of power unwisely used. Our forefathers were determined that they would make no such mistake in America. Power was to be wisely distributed and jealously guarded.

Harken again to Jefferson:

"Were not this great country already divided into States, that division must be made, that each might do for itself what concerns itself directly, and what it can so much better do than a distant authority."

And again:

"Were we directed from Washington when to sow, and when to reap, we should soon want bread."

Again:

"When all government, domestic and foreign, in little as in great things, shall be drawn to Washington as the center of all power, it will render powerless the checks provided of one government on another, and will become as venal and oppressive as the government from which we separated."

The tendency toward centralization at Washington was critically observed more than a century ago, but there has been little to halt the onward march.

But one thing will halt it—the American People; they alone can halt it. When they see their home affairs taken away from them one by one, intrusted to the tender and distant mercies of bureaucratic administration, they are going to resurrect Democratic doctrine on this question, and adopt it. States' Rights is no longer a partisan nor a sectional but an American doctrine in which even Republicans have come to believe. Washington itself will be forced by the very burden which centralization imposes, to warn the people not to be misled in giving away their rights. Not every problem that faces the country can be met by the simple expediency of more Federal legislation.

We have too many laws now. We are confronted today with the necessity of farm relief legislation, an obligation that members of Congress cannot ignore. But, farm relief legislation becomes necessary today because so much of special privilege legislation has preceded it. If other interests, using special legislation inuring to their benefit, had not brought about the present economic situation, the farmer would not be facing a condition that requires legislation for his benefit!

The nation needs legislation to undo some of the legislation already enacted. The American people should have a fair chance to manage their own affairs. We should check the growing tendency of our government to pry into our most

private affairs, to take over the operation of our homes, and to dictate the conduct of our families. Americans do not want too much governing, and once they get the proper channel through which to express their resentment of it, they will make it clearly and unmistakably known. The Democratic party should become the means for that expression.

NORTH CAROLINA'S STAND

We need to return to some old-fashioned Democracy! which simply means in other words, "Back to the fundamental principles of the Constitution."

It will be remembered that my state was responsible for the Tenth Amendment to the Constitution, which reads:

"The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."

North Carolina was unwilling to leave this important question to future interpretation, and, together with Rhode Island, refused to enter the Federal Government until November, 1789, nearly a year after its formation under the Constitution, and would not enter until this amendment was adopted. There were other states just as concerned over its incorporation, but entered the Federal Government upon assurance that it would be put in. However, North Carolina wanted it "written in the bond." Therefore, it may occasion no surprise if North Carolinians have firm convictions in regard to it today. The Old North State just as jealously favors the guarding of her rights today as she did in 1789.

Dearborn Independent, January 31, 1925.

WHY DO WE HAVE TO FIGHT SUCH FREAKS?

One sometimes wonders, when we are annually compelled to fight against some of the bills introduced into the state legislature, why public officers, keen and astute lawyers and clear headed business men are so easily influenced by interested propagandists, professional uplifters, professional philanthropists, sensationalists, sob-statisticians, professors of non-serious subjects, pseudo-medical dilletantists, star-gazers and so-called reformers—all of whom are afflicted by mental mixed astigmatism whereby they are neither able to see clearly and distinctly in any pane or at any distance.

LAY DICTATION OF MEDICAL PRACTICE

The Volstead act is a sample of the viciousness of lay dictation in medicine. Here we have an illustration of a legislative body without knowledge of the subject, pronouncing on the uselessness of alcohol as a drug, has prescribed its dosage and has compelled the violation by the physician of the confidences of his patient in order to secure even the amount which is allowed.

INTERSTATE POST GRADUATE ASSEMBLY CLINIC TOUR TO EUROPE

The Interstate Post-graduate Clinic Tour of American Physicians to Canada, the British Isles and France next May is rapidly developing into the most remarkable expedition of the sort ever undertaken. The total cabin accommodation of the new White Star Line S. S. "Doric" has been chartered for this trip and already 476 of the 602 berths have been assigned.

At the present rate the ship will be filled in about three weeks. Those who are interested in going should make their reservations as soon as possible by sending a deposit of $65.00 to the Managing Director of the Association, Dr. William B. Peck, Freeport, Illinois.

THE ATLANTIC CITY SESSION

ENTERTAINMENT FOR THE LADIES AT ATLANTIC CITY

The Local Committee of Arrangements at Atlantic City, through Mrs. Worth Clark, chairman of the Women's Committee of Entertainment, announces that plans are being made to provide entertainment for the wives and daughters of Fellows, so that their visit to Atlantic City during the annual session of the American Medical Association will be made as pleasant as possible. The indications are that many Fellows will be accompanied to Atlantic City by members of their families.—*Jour. A. M. A.,* Feb. 28, 1925.

ALUMNI REUNIONS

Secretaries of alumni associations, college classes, etc., are requested to send as early as possible to the Secretary of the American Medical Association information concerning banquets, reunions or other meetings that are to be

held in Atlantic City during the coming annual session.—*Jour. A. M. A.*, Feb. 28, 1925.

Reduced Railroad Fare to Atlantic City

The rate of one and one-half fare for the benefit of members and Fellows of the American Medical Association who will attend the annual session in Atlantic City, May 25-29, has been granted by the railroads. The member, when purchasing his ticket, pays the full one way fare to Atlantic City, at the same time securing his certificate from the railroad agent. This certificate will be approved at Atlantic City by the Secretary of the Association, must be validated by a representative of the railroads, and will then entitle the holder to a return ticket at one-half fare. The validation desk will be located near the Registration Bureau on the Steel Pier.—*Jour. A. M. A.*, Feb. 14, 1925.

AMERICAN MEDICAL GOLFING ASSOCIATION

The Eleventh Annual Tournament of the American Medical Golfing Association will be held at Seaview Golf Club, Atlantic City, Monday, May 25.

Dr. D. Chester Brown, Danbury, Conn., is president, Dr. Walt Conaway, Atlantic City, is secretary-treasurer, and John Walter, Evanston, Ill., is business secretary of the American Medical Golfing Association.

Any Fellow of the American Medical Association may join the American Medical Golfing Association by paying the enrollment fee and subscribing to the by-laws. Application for enrollment should be sent to John Walter, 1507 Hinman Avenue, Evanston, Ill.—*Jour. A. M. A.*, Feb. 14, 1925.

MEDICAL BILLS BEFORE THE ILLINOIS LEGISLATURE OF INTEREST TO PHYSICIANS

The following bills are before the Illinois Legislature. They are sent us by the chairman of the Legislative Committee, Dr. J. R. Neil, Springfield, Illinois, to whom all communications should be addressed. Comments are invited and if any one is interested in any specific measure copy of the bill will be sent to him, upon request to the chairman of the Legislative Committee.

Amends section 1 of the municipal tuberculosis sanitarium Act by increasing the maximum tax from one mill to one and one-half mills.

Jan. 27. Introduced. Committee on Municipalities.

S. B. 44. Ryan, Frank J.

Provides for the issuance of certificates of registration as a registered natureopath by the Department of Registration and Education, and fixes qualifications for applicants, which certificates are required for the practice of massage or natureopathy after October 1, 1925.

Feb. 4. Introduced. Committee on Public Health.

Comment: This bill rests at the present time There is an increasing resistance noticeable among the barbers and it is their intention to fight the bill very actively by sending a proper representation to Springfield. There is no need for any great activity on the part of the Medical Society regarding this measure at this time, as it undoubtedly will be a case of euthanasia. (The stenographer in taking notes misunderstood this term and wrote "youth of Asia," which probably explains the situation equally as well as the bill probably has just as much chance as a youth in a foreign country.)

S. B. 47. Barr.

Amends Workmen's Compensation Act, extending provisions of act so as to include enterprises in which sharpedged tools are used or handled . Extends meaning of the term "employe" so as to include persons whose employment is outside of Illinoiis, if the contract of hire was made within the State of Illinois. Increases the amount of compensation to be paid employees for injuries. Provides that employer shall furnish competent physician to render first and subsequent aid. Provides that pending final determination of any controversy before an Arbitrator or the Commission, such Arbitrator or Commission may make interlocutory findings, orders and awards.

Feb. 4. Introduced. Committee on Judiciary.

S. B. 58. Denvir.

Amends section one of Article V of Cities and Villages Act enumerating powers of the city council in cities and the president and board of trustees in villages to provide: Sixty-seventh: To provide for the inspection of steam boilers, air tanks, ammonia tanks and other dangerous tanks; seventy-sixth: To appoint a board of health, and prescribe its powers and duties or to establish a department of health with like powers in the head thereof; ninety-first: To tax, license and regulate auctioneers, distillers, breweries, lumber yards, coal yards, livery stables, public scales, ice cream parlors, coffee houses, restaurants, hotels, detective agencies, private detectives, money changers and brokers.

Feb. 10. Introduced. Committee on License and Miscellany.

S. B. 73. Boehm.

Adds section 6a to Division I of the Criminal Code to prohibit the advertising, selling, or giving away or the writing or printing of any letter, circular, etc., giving information to prevent conception, and provides penalty.

Feb. 11. Introduced. Committee on Judiciary.

S. B. 82. Roos.

Provides for the formation, government, operation and dissolution of mosquito abatement districts in any part of the State to facilitate the extermination of mosquitoes, flies and other insects, and for the assessment, levy, collection and disbursement of taxes therein.

Feb. 11. Introduced. Committee on Municipalities.

S. B. 115. Deck.

Amends section 6 of "An Act relating to children who are now or may hereafter become delinquent,

to define these terms, and to provide for the treatment, control, maintenance, adoption and guardianship of the persons of said children," approved April 21, 1899. Provides for the appointment of probation officers to be paid by the county.

Feb. 18. Introduced. Committee on Fees and Salaries.

S. B. 116. Glackin.

Creates the office and authorizes the appointment of county health superintendents. Appropriates $50,000 to Department of Public Health to pay one-half of the salary of county health superintendent in any county under this act.

Feb. 18. Introduced. Committee on License and Miscellany.

Comment: This bill will be published in full in our next bulletin.

S. B. 117. Jewell.

Amends sections 1, 2, 3 and 5 of "An Act to regulate and limit the hours of employment of females in any mechanical or mercantile establishment or factory, or laundry, hotel or restaurant, or telegraph or telephone establishment or office thereof, or in any place of amusement, or by any express or transportation or public utility business, or by any common carrier or in any public institution, incorporated or unincorporated, in this State, in order to safeguard the health of such employees, to provide for its enforcement, and a penalty for its violation," approved June 15, 1909. Provides eight-hour working law for women and makes certain exceptions.

Feb. 18. Introduced. Committee on Corporations and Industrial Affairs.

S. B. 120. Lantz.

Repeals "An Act to prohibit the establishing and enforcing of the tuberculin test for dairy animals by any city, village, incorporated town, county or other corporate authority in the State of Illinois," filed June 12, 1911.

Feb. 18. Introduced. Committee on Agriculture, Live Stock and Dairying.

H. B. 6. Choisser.

Provides for the formation and disbursement of a pension fund for aged persons, and an annual tax of one-half mill on all taxable property within the State. Fund is to be administered by the Industrial Commission under the name and style of Old Age Pension Commission with the aid of the respective County Pension Agents.

Jan. 28. Introduced. Committee on Judiciary.

H. B. 29. Soderstrom.

Amends Workmen's Compensation Act. Among other things provides that "employer shall furnish competent physician to render first and subsequent aid."

Jan. 28. Introduced. Committee on Insurance. Feb. 17. Committee on Judiciary.

H. B. 58. McClugage.

Amends sections 1, 2, 3, 4, 5 and 6 of the act relating to schools for crippled children, to include boards of school directors.

Feb. 4. Introduced. Committee on Education.

H. B. 59. McMackin.

Amends section 1 of "An Act to provide for wash rooms in certain employments to protect the health of employees and secure public comfort," to require washrooms to be in all railroad roundhouses, terminal passenger stations and yard offices.

Feb. 4. Introduced. Committees on Industrial Affairs.

H. B. 73. Choisser.

Adds section 14a to "An Act to revise the law in relation to the regulation to the practice of embalming," to provide that no ambulance or other vehicle which is used for the transportation of sick or injured persons shall be used to transport dead human bodies.

Feb. 4. Introduced. Committee on Judiciary.

H. B. 82. Choisser.

Provides for one day of rest in seven for employees in certain employments.

Feb. 10. Introduced. Committee on Judiciary.

Comment: Physicians are not included.

H. B. 86. Green.

Provides that if a proposed amendment to the Federal Constitution is duly submitted to the General Assembly, and is not ratified at the session at which it is submitted, that the question of ratification be submitted to the people.

Feb. 10. Introduced. Committee on Elections.

Comment: Obviously an unwarranted measure. A beautiful way for the legislature to pass the buck. Sheppard-Towner, Child Labor and other exponents of Federal Subsidies undoubtedly will indorse this measure.

H. B. 119. Curran.

Makes appropriation and distribution to the Department of Public Welfare for the support, operation, maintenance and expenses of the several State charitable, penal and reformatory institutions and other divisions of the Department of Public Welfare, until the expiration of the first fiscal quarter after the adjournment of the next General Assembly, of $25,434,593.

Feb. 12. Introduced. Committee on Appropriations.

H. B. 120. Fekete.

Amends sections 1, 2, 4, 6, 7 and 12 of "An Act in relation to the regulation of the practice of optometry," providing for the issuance of certificates of registration as registered optometrist, and fixing qualifications of applicants.

Feb. 12. Introduced. Committee on Judiciary.

H. B. 136. Reeves.

An act in relation to the eradication of tuberculosis among cattle, providing that county boards may appoint a county veterinarian. Provides for the making of tests, destroying of infected cattle and imbursement to owner.

Feb. 17. Introduced. Committee on Agriculture.

H. B. 137. Reilly.

Amends sections 1 and 3 of "An Act authorizing cities and villages to provide for the payment of allowances of money to the families of dependents of policemen and firemen killed or fatally injured while in the performance of their duties." Approved June

27, 1921, to provide for the creation of a trust to conserve the funds so paid.

Feb. 17. Introduced. Committee on Municipalities.

Comment: Undoubtedly a humane measure, but not very far removed from "State Medicine" ideas.

H. B. 153. Booth.

Amends section 10 of "An Act to provide for the partial support of mothers, and for the probationary visitation, care and supervision of the family for whose benefit such support is provided," as to the qualification of such mother when she has but one child under the age of 16 (now 14) years.

Feb. 18. Introduced. Committee on Judiciary.

H. B. 169. LaPorte.

Amends section 16 of "An Act to enable cities and villages to establish and maintain public tuberculosis sanitariums," approved March 7, 1908, to permit the levy of a tax of not to exceed two (now 1 1-3) mills.

Feb. 18. Introduced. Committee on Municipalities.

H. B. 176. Tice.

An act to provide for the eradication of bovine tuberculosis by means of quarantine and otherwise, and providing penalties for violations of the provisions thereof. Provides for tuberculin tests under the direction of the Department of Agriculture.

Feb. 18. Introduced. Committee on Agriculture.

H. B. 182. Abbey.

Appropriates $1,153,397 to provide for the ordinary and contingent expenses of the Department of Public Health until the expiration of the first fiscal quarter after the adjournment of the next regular session.

Feb. 19. Introduced. Committee on Appropriations.

ERRONEOUS STATEMENT RELATIVE TO THE SHEPPARD-TOWNER ACT

The publicity department for the Children's Bureau of the United States Department of Labor announces that $1,688,047.12 has been expended by federal and state governments in the carrying out of the Sheppard-Towner Act, or the so-called federal Maternity and Infancy Act, during the first fifteen months following its passage. The federal grants to the states have totaled $1,046,523.56, and the state appropriations $641,523.56. Forty-three states cooperated in 1922, and forty-one states in 1923. The number for 1924 includes forty. The states that do not cooperate are Kansas, Illinois, Louisiana, Vermont, Maine, Massachusetts, Connecticut and Rhode Island, but Louisiana is to come in during 1925. Since this bill was strongly opposed by the medical profession before it was passed by Congress and endorsed by President Harding, it is in order to inquire as to just what has been accomplished through the expenditure of this large amount of money. Perhaps it is well to quote exactly what the publicity department for the bureau has to say; the claim is made that this act has demonstrated its value since it has:

1. Stimulated state activities in maternal and infant hygiene.

2. Maintained the principle of local initiative and responsibility.

3. Improved the quality of the work being done for mothers and babies by disseminating through a central source—the federal government—the results of scientific research and methods of work which have been found to operate successfully.

4. Increased state appropriations with the passage of the act. From the appropriation for the fiscal year 1922, fifteen states were able to accept only the $5,000 unmatched funds. Six states were able to accept only the $5,000 unmatched from the federal appropriation for the fiscal year 1923. All of the states cooperating under the act either have already accepted more than the $5,000 unmatched allotment from the 1924 federal appropriation, or will be able to do so. Moreover, since the Maternity and Infancy Act became effective, thirty-three states accepting it have made definite increases in their own appropriations for the welfare of mothers and babies.

Actually, the first three items just quoted mean nothing. They represent no scientific evaluation of results, but merely the general statement that more attention is being paid to the matter without evidence of paternalism. How is it demonstrated that this act, which is essentially paternalistic, has "maintained the principle of local initiative and responsibility?" The fourth claim made means even less from the standpoint of benefit, since one of the chief charges against this act was that it forced the states to appropriate money in order that they might receive an equal share of federal funds. It is strange, then, that the claim should be made that one of the benefits of the act has been that the states have been forced to appropriate money which, by the very nature of things, they could hardly avoid appropriating. If the proponents of the Sheppard-Towner Act would justify the bill, they must submit exact figures indicating that the maternal and infant death rates have been appreciably lowered in those states which have cooperated with the federal government, and that the rates are much lower than those obtaining before this meddlesome legislation became effective, and lower also than those of the states which have not cooperated, and which may serve in this case as a control. Furthermore, recognition should be made of the tendency toward lowering of maternal and infant mortality rates in accordance with the general lowering of all mortality rates following increased application of our knowledge of sanitation and hygiene.—J. A. M. A.

THE FAMILY PHYSICIAN

The Chicago Tribune, Nov. 28, 1924, comments editorially on the Family Physician as follows:

In recent years of medical progress therapeutics has come to be a Cinderella. The fame won in scientific research, and most properly bestowed for scientific discoveries in the origin and nature of diseases, has inevitably thrown into the shade the practice of medicine, the art of the sick room. At the same time the growth of medical knowledge and the general tendency of the time has developed specialization to a high degree.

Both these phenomena in the medical world have been attended by disadvantages and thoughtful men

in the profession for some time have believed that they needed some offset or correction. There began to be too much of a flow of talent into special fields either of investigation or specialized practice, and were the tendency to increase we should presently have a great accumulation of knowledge and no one applying it to the actual relief of the suffering. Aside from the inherent limitations and dangers of specialization, the system is not workable except in the larger medical centers. In the country and small towns there is need, as always, for the general practitioner; and for that matter we believe there is need for him in cities as well; not only because of the high cost of the specialist system, but because the family physician is a very high product of experience and science, performing a service which no group of specialists can do. What is called the old fashioned family doctor requires a knowledge of the physical and mental material he deals with in advising and caring for his patients year in and year out, which the specialist system cannot have except through him. The specialist supplements his knowledge and together they represent a tremendous advance in efficiency. But we cannot get along without the general practitioner, and it is well that a great institution like the Northwestern University should give special attention to him.

RELEASE OF TRYPARSAMIDE

The Rockefeller Institute for Medical Research has announced the release of the drug known as Tryparsamide for use in the treatment of human and animal trypanosomiasis (African sleeping sickness and *mal de caderas*) and selected cases of syphilis of the central nervous system. This action is based on results reported from clinical investigations which have been in progress for several years. The drug will be manufactured by the Powers-Weightman-Rosengarten Co. of Philadelphia, and will become available through the regular trade channels about January 1, 1925. In releasing the drug for the benefit of the public, the Rockefeller Institute desires it to be known that the Institute does not share in any way in profits that may be derived from the sale of the drug and that, with the cordial cooperation of the manufacturers, provision has been made for the maintenance of a schedule of prices on as low a basis as possible.

NATION'S NEED FOR THE FAMILY DOCTOR SHOWN

Survey at N. U. Hits at Specialization

The Chicago Tribune, Nov. 26, 1924, makes the following comment:

America's need for the old time family doctor—the doctor who could treat anything from earache to appendicitis—has won the attention of Northwestern University.

Definite action was taken last night after President Walter Dill Scott had read a survey made on this need to the members of the university's board of trustees.

The survey, which substantiated what Chicago medical leaders have been saying in a general way for several years, was made by two of the most noted men in the field of medicine in the country and two educators representing the Evanston institution.

Those Who Made Survey

The four were Dr. Charles H. Mayo one of the heads of the famous clinic at Rochester, Minn.; Dr. E. P. Lyon, dean of the school of medicine of the University of Minnesota; Prof. Raymond A. Kent, dean of the college of liberal arts, and Prof. Horace Secrist, teacher of economics at Northwestern.

Their survey was made in a series of conferences and after the study of a vast deal of data. It is believed to be the first exhaustive study of this particular medical need.

Summarized, the report of these four men holds that for the last two or three decades the trend in medical study has been toward specialization. Medical schools have turned out graduates learned in the diseases of the ear, nose, and throat; men who diagnose stomach ills and nothing else; doctors who devote their sole attention to the lungs or abdominal surgery.

Everybody who today wins an M. D. turns, it seems, toward some special form of medicine.

The result has been, these noted students of the problem say, that in many parts of the country there are plenty of specialists, but a dearth of all round doctors. This is especially marked, it is said, in rural districts where the need for the family doctor is most pronounced.

Go Miles to Find a Doctor

Cases have been reported where patients suffering from complex ailments have had to cover miles in making the rounds of the specialists before they could find a doctor who would administer to their needs.

So, as President Scott told the trustees last night, the time has come for medical schools to bring back the old fashioned, well rounded doctor. The trustees agreed. In making plans for McKinlock Memorial campus, which is to be built on Lake Shore drive by Northwestern, care will be taken that conditions are suitable for the teaching of this sort of medical man.

"This does not mean," President Scott said, "that one will not be able to take specialized training at our school. We will teach specialists. It means that we will also teach men to become doctors who can administer to the needs of a family, whether that need be a cure for earache or gallstones."

WE ARE TAKING TOO MUCH INTEREST IN THE PATIENT AS A "DISEASE" AND NOT ENOUGH AS A HUMAN BEING

The Passing of the Old Time Doctor

A man who is now a prominent practicing physician was speaking of an old doctor who had just died. "I remember," he said, "when I was an interne, coming in late one night to the hospital and I saw this doctor sitting on the steps. 'What is the matter?' I asked him. 'Well, that woman we operated today,' he said. 'I went home and went to bed, but I kept thinking

about her and I couldn't sleep, so I got up and dressed and came over. I thought it was better to be around here in case any complications should come up.'"

That to us seems to size up the type of physician that represents a period that may not have been as rich in scientific knowledge as the present but one that has been one of the greatest factors in making the medical profession not only respected but beloved.

Is it because we are taking too much interest in the patient as a "disease" and not enough as a human being that we are getting away from the personal touch that characterized the old time family doctor? To make a correct diagnosis may be gratifying. Too many physicians may think their duty is performed when they have solved a difficult case. The old time doctor stayed with his patients till the patient either died or got well. His patients had no opportunity to slip off to the chiropractor or Christian Scientist or some other attractive cult that would give him some hope, if not help.

And between the family physician of the old days who carried with him hope and good cheer, if not antitoxin and serum, and the modern specialist who is so busy with a crowded practice and writing papers and attending meetings that he is through when his diagnosis is correctly made, there was another type of man—the man who kept abreast of or even led the scientific work of his day but still carried with him affection and sympathy; who was not only respected but loved by all whom he strove to observe.—*Mo. State Med. Jour.*, Nov., 1924.

WHY MASSACHUSETTS BEAT CHILD CONTROL

NEW ENGLAND PARENTS RELIEVE THEY CAN MANAGE THEIR OWN CHILDREN

MARGARET C. ROBINSON IN THE DEARBORN INDEPENDENT MARCH 7

The fathers and mothers of the State of Massachusetts believe that they are better qualified to judge of what tasks their children under eighteen years of age are capable of performing in the home or on the home farm than the Children's Bureau at Washington, which defines the washing of dishes and the collecting of hens' eggs as "Child Labor."

On November 4, the men and women of Massachusetts were given an opportunity, under the People's Opinion Law, to express their opinion as to whether the Massachusetts legislature should ratify the so-called Child Labor Amendment. The result of this referendum to the people of a question touching not only their fundamental constitutional rights, but so intimate and personal a matter as the control and education of their own children, is of interest and value to the whole country.

At the beginning of the six weeks' campaign for and against the amendment, public opinion was favorable to the amendment, on the strength of its name alone. Any measure for the removal of harmful conditions of child labor wins immediate sympathy in Massachusetts, which has always been a pioneer in good child labor legislation. But as the campaign of education went on, and the people began to realize that the amendment contained *an enormous new grant of power to Congress*, such as no government in the world exercises outside of Soviet Russia, and as the full significance of the text of the amendment ("Congress shall have power to limit, regulate and prohibit the labor of persons under 18") began to be understood, a tremendous change in public opinion set in, until on November 4 when the vote was taken 241,461 men and women voted for the amendment and 697,563 against it. This is the largest majority ever given on any question submitted to the people of Massachusetts.

What are the reasons for this tremendous defeat of the amendment in a progressive state like Massachusetts, which has always stood in the forefront of Child Labor Reform?

The advocates of the amendment, who are very bitter at such an overwhelming defeat at the hands of the people, say that the people were deceived.

Were the people deceived? There were certainly many barefaced attempts to deceive them. They were told, for instance, by advocates of the amendment, that little children of six and eight worked long hours in the southern mills, and that the South has no restrictive child labor legislation. The fact that every southern state forbids child labor in the mills up to the age of 14 was carefully concealed.

They were told that in Georgia little children could work all night in the mills. No child under 14 years and 6 months can work in the mills in Georgia after 7:00 p. m. or before 6.00 a. m.

They were told that 89,000 children under 15 are working in the mills in Georgia. The actual number is considerably under 300.

They were told that almost no states prohibit child labor at night. The fact is that almost all states do prohibit it.

They were told that no Socialist had anything to do with the drafting the amendment. The fact is that a woman who had much if not most to do with drafting the amendment—Mrs. Florence Kelley—is a member of the Socialist party, ex-president of the Intercollegiate Socialist League, and lecturer at the Rand School of Socialism.

But—and here's the rub!—*these attempts to deceive the people were not successful*, and what is more, they acted as a boomerang. The people decided that there must be something radically wrong with a measure whose advocates felt it necessary to resort to such easily disproved statements as these, to make out any sort of a case. Hence they voted overwhelmingly against it. *The people were not deceived!*

Early in the campaign the advocates of the amendment attempted to secure the support of Massachusetts textile manufacturers by an appeal to their self-interest, in the form of an assurance that the amendment would eliminate hurtful competition with southern mills. Knowing that child labor in southern mills is today a negligible quantity, and that it is lower taxes, lower wages for men and women, due to lower

cost of living, nearness to the cotton fields and to soft coal mines, and so on, which makes the South a formidable competitor, the Massachusetts manufacturers refused to swallow the bait. It is evident that the advocates of the amendment had expected great results from this appeal, and their bitterness against the manufacturers is accordingly great.

In revenge they are circulating all over the country statements that Massachusetts was flooded with money by the manufacturers to defeat the amendment. Is this true?

To those who know the facts and who worked hard to help raise money needed for printing, speakers, advertising, and so on, this statement is ridiculous and worse. The money spent by the "Citizens' Committee" which conducted the campaign was about $16,000, which came from 800 contributions, averaging $20 each. The smallest contribution was 25 cents from a working woman. The largest individual contribution was $200. The Massachusetts Public Interests League, an organization of public-spirited women whose platform is "to defend the Constitution of the United States, to oppose bureaucratic and socialist legislation, and to aid in furthering causes which are of importance to public welfare," raised several hundred dollars for the work of the Citizens' Committee.

Another charge made by the defeated party is that the amendment was defeated by Catholic influence.

Did the Roman Catholics defeat the amendment? Undoubtedly many Catholics did strongly oppose the amendment. Catholics will always oppose measures which threaten to undermine, weaken or destroy the institution of the family! But it is to be noted that at the same election on November 4, a Catholic candidate for Governor of Massachusetts was overwhelmingly defeated; that not only in the cities like Boston and Fall River, where there is a large Catholic population, was the amendment defeated, but in towns where there is not even a Catholic church; in fact, in every precinct in the state there was a majority against the amendment! Certainly no unprejudiced person can attribute such political power to any one organization in Massachusetts, even to the Catholic church. Another thing to be noted is that Georgia is as strongly opposed to this amendment as Massachusetts, and Georgia is the stronghold of the Ku Klux Klan, whose chief *raison d'etre* is popularly supposed to be antagonism to the Catholic church. Some other explanation must be sought for the overwhelming victory in Massachusetts.

Bishop Lawrence, head of the Episcopal church in Massachusetts, Rev. A. Z. Conrad, one of the leading Congregational clergymen of the state, Rev. J. M. Shepler, presiding elder of the Methodist church, and other distinguished clergymen, stood with Cardinal O'Connell in opposing a measure which proposed to places 40,000,000 children and youths in the control of Congress.

The heads of our two greatest educational institutions, President Lowell of Harvard and President Stratton of the Institute of Technology, joined the Citizens' Committee for opposing the amendment.

Several of the ablest members of the Massachusetts Child Labor Committee, who have worked for years and with great success to improve child labor conditions in Massachusetts joined the opposition to this amendment, because they believed it to threaten serious evils to American youth.

Joseph Lee, president of the Playground and Recreation Committee, known throughout the United States for his long years of devoted service to the welfare of childhood, was a strong opponent of the amendment.

Who will say that these gentlemen were "deceived" concerning the amendment? And what are his intellectual qualifications for making the decision?

A feature of the campaign which has its amusing side is the worthlessness of "indorsements" of this amendment by organizations. Over and over again we were told of the many powerful organizations, especially women's organizations, which had indorsed it. But when election day came social workers, members of the churches, of the Y. W. C. A., teachers, and club women by the thousand voted against it in spite of the indorsements of these organizations. A former officer of the Massachusetts Federation of Women's Clubs says that not a single club woman of her acquaintance voted for the amendment!

Massachusetts has 966,000 women over 21 years of age. The fact that the combined vote of men and women for the amendment was only 241,461 shows what a small proportion of women favored it.

Why were the men and women of Massachusetts so strongly opposed to the amendment? For the same reason that the people of every other state will be against it if they inform themselves of its true nature. Representative Isaac Foster, of Ohio, who sponsored the amendment in the House of Representatives (and who was in consequence defeated by his constituents at the primaries) admitted that *to submit this amendment to a convention elected by the people for the purpose would mean certain defeat for it!*

The advocates of the amendment will do their utmost to prevent the people of other states from being allowed to vote on the question. They prefer to have it left to state legislatures, trusting to their powerful and experienced lobbies to control the legislators.

One of the things which aroused the suspicions of the people of Massachusetts early in the campaign was the reiteration of the propagandists that the amendment *did not mean what it said*. They were vehement in declaring that it did not mean this, or it only meant that. Fortunately the language of the amendment is so very clear and simple that the voters (who are able to read, since we have a literacy test for citizenship in Massachusetts) felt competent to judge of the meaning of the words: "Congress shall have power to limit, regulate and prohibit the labor of persons under 18 years of age." They inferred that it meant what it said, and voted accordingly. In this judgment they are supported by a decision of the Supreme Court, which said:

"The framers of the Constitution must be understood to have employed words in their natural sense,

and to have intended what they have said; and in construing the extent of the powers which it creates, there is no other rule than to consider the language of the instrument which confers them." (Gibbons vs. Ogden, 9 Wheat, 188.)

Another decision of the Supreme Court is of importance in connection with this amendment: "The power to regulate implies in its nature full *power over the thing to be regulated.*" This certainly gives food for thought when the thing to be regulated is the labor of persons under 18.

Congressmanu Ramseyer, of Iowa, *who voted for the amendment,* said:

"Mark right here, too, it does not say the 'employment' of persons under 18 years of age, but the 'labor' of persons under 18 years of age. * * * A boy who is sent by his father to milk cows labors. Under the proposed amendment Congress will have power to regulate the labor of a boy under the direction of his father as well as the employment of the same boy when he works for a neighbor or stranger. * * * Congress will have the power to 'limit, regulate and prohibit' the labor of girls under 18 years of age in the home and of boys under 18 years of age on the farms. Gentlemen admit that the effect of the proposed amendment is just as I state it."

The people of Massachusetts resented the attempts of the advocates of the amendment to deceive them as to the meaning and scope of the amendment.

They are not ready to line up with Russia in turning over the labor and education of the young to centralized control.

They believe that the states, which have done so much to improve child labor conditions, are more to be trusted for a continuation of the good work, than a Socialists Bureau at Washington, hundreds or thousands of miles away. That Federal dictation to the states is not needed is proved by the fact that since the second Federal Child Labor Law was declared unconstitutional twenty-two states have improved their laws for children.

The people of Massachusetts believe that the average parent is a saner judge of what labor his child under 18 is fitted to do in the home or on the home farm than the Children's Bureau at Washington, which lists as "Child Labor" such tasks as washing dishes, hunting eggs, making beds, caring for younger brothers and sisters, and so on.

In short, they believe it about time to defend their fundamental constitutional rights from further encroachments and to reserve for themselves such intimate and personal matters as the control and education of their own children.

SHALL THE RICH PAY MORE?

The question of whether the amount of a physician's fee should vary with the patient's financial condition never has been settled to the satisfaction of all. Physicians usually calculate their charges in accordance with one or more of the following methods (a) A fixes fee schedule of charges for all alike; (b) an optimum fee schedule on which all charges are made and from which discounts are made to meet varying financial conditions of patients; (c) a fee schedule based upon what the physician considers his time worth. Patients who can't afford the schedule are not given discounts, but are treated free and the rich are charged extra.

All people have an interest in this problem from the standpoint of economic justice. Physicians have the additional responsibility of expressing its fairest solution in the ethics governing their conduct. Friendly arbitration or the law must furnish the final decision where controversy prevents more amicable adjustments. The vast majority of physicians calculate the value of their services from a more or less elastic personal fee schedule which changes from time to time, depending upon the usual conditions governing life. Nearly all physicians also discount their fees from 10 per cent to 100 per cent for a considerable percentage of their patients.

An inquiry upon this point submitted to a series of successful physicians recently brought the information that they collected what they considered their services worth from only about one-third of their patients; another third paid part fees, and about one-third of their services were rendered without compensation of any kind. The California Medical Association has taken an advanced stand upon the question of fees by passing a resolution endorsing the plan of charging fees in accordance with the patient's ability to pay, from nothing up to what each physician recognizes as his personal fee schedule. If this practice were more generally employed and more generally understood by the public, every physician's office would become a "medical center," or a "health center," or a "clinic" of the very best kind. Of course, there are a few physicians who have reached that far from enviable position in public opinion whereby they can—and a few of them no doubt do—conduct the practice of their profession upon a cash register basis. However, there are plenty of the other kind—and good ones, too. Comparatively few physicians actually charge wealthy patients extra high fees. However, some do, and the subject is often discussed both by physicians and the public in general.

An editorial in a recent number of The Lawyers' Magazine reviews the question of "Making the Rich Pay More" in an authoritative and interesting manner. The editorial states

"An English judge is reported, not long since, to have upheld the right of a physician to charge a wealthy patient more than he would ask a poor man for similar services.

"There seems to be a conflict in the authorities, in this country, as to whether it is proper to prove the value of the estate of a person for whom medical services were rendered, or the financial condition of the person receiving such services, in estimating their value, in the absence of an express contract. Some decisions favor the admission of such evidence. Haley's Succession, 50 La. Ann. 840, 24 So. 285; Czarnowski v. Zeyer, 35 La. Ann. 796; Schoenberg v. Rose, 145 N. Y. Supp. 831. In other jurisdictions, however, such evidence may not be considered. Robinson v. Campbell,

47 Iowa, 625; swift v. Kelly, Tex. Civ. App., 133 S. W. 901.

"In determining the value of professional services rendered, testimony as to the value of a deceased patient's estate has been held inadmissible in the absence of a recognized usage obtaining to graduate professional charges with reference to the financial condition of the person for whom such services are rendered, which had been so long established and so universally acted upon as to have ripened into a custom. Morrisett v. Wood, 123 Ala. 384, 82 Am. St. Rep. 127, 26 So. 307.

"On the question of the value of services rendered by a physician, it is stated by the court in Lange v. Kearney, 21 N. Y. S. R. 262, 4 N. Y. Supp. 14, affirmed in 127 N. Y. 676, 28 N. E. 255: 'There is also evidence tending to establish a custom or rule of guidance as to charges of physicians for services rendered, and which makes the amount dependent upon the means of the patient, his financial ability, or condition; but this is a benevolent practice which does not affect the abstract question of value, or impose any legal obligation to adopt it, and cannot be said to be universal on the evidence. Indeed, there does not seem to exist any standard by which, in the application of the rule, the amount to be paid can be ascertained.'

"Whatever may be the true principle governing this matter in contracts, the court, in one case at least, is of the opinion that the financial condition of a patient cannot be considered, where there is no contract, and recovery is sustained on a legal fiction. Cotnam v. Wisdom, 83 Ark. 601, 119 Am. St. Rep. 57, 104 S. W. 164, 13 Ann. Cas. 25, 12 L. R. A. (N. S.) 1090."

The problem of physicians' fees is now much in the public eye everywhere as a result of the recent controversy between the Ford hospital authorities, on the one hand, and those of the Medical Society of Detroit Academy of Medicine, on the other hand. The Ford hospital appears to be conducted upon somewhat the same basis that a factory is conducted. Costs of services are accurately figured and charges are made to all alike upon that basis, regardless of the patient's ability to pay. This, in so far as his private hospital charges are concerned, while much criticized upon ethical grounds, is nevertheless conceded to be Ford's business.

The trouble seems to be that, in order to reach machine perfection, a definite price was fixed for each medical and surgical service, and there was to be no more flexibility in that charge than in the charge for the rent of a room or the price of an automobile. Doctors not on the salaried hospital payroll objected—and properly so—to the principle involved. Nevertheless, if we understand the situation, Ford is doing precisely what insurance companies (life and accident); governments (national, state, and local); hospital associations; life extension institutes; fraternal organizations, with sick benefits; clinics of the pay species, and many, many others in the medical field are doing.

The controversy is as old as man, and it is no nearer a solution now than it was a generation ago. The fundamentals are clear, but are usually overlooked. It is primarily a question as to whether the promotion of health and the prevention and treatment of disease is to be carried on as a private arrangement between agent and consumer or whether it is to become a great organized public utility where everyone is served like they are by a transportation system, for example: Buy your ticket or secure a free pass and ride on the train that is available and accept the conductor you happen to draw.

It is interesting in this connection to inform our members that there is a movement on foot to try to have the next California legislature declare health and medical service to be a public utility and thus place its supervision under control of the state. What are you going to do about it?—California & Western Medicine.

SUBSCRIBERS TO THE LAY EDUCATIONAL FUND OF THE ILLINOIS STATE MEDICAL SOCIETY CORRECTED TO DATE

Below is a list of subscribers from down state and Chicago to the Lay Educational Fund as per letter sent members soliciting funds and cooperation. The list has been carefully checked to make sure of accuracy. If an error has crept in kindly note same and forward to the committee:

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M. Adles .....Du Quoin
W. H. Allen.....Waverly
Frank P. Auld.....Shelbyville
R. Albright .....De Kalb
Cleaves Bennett .....Champaign
B. M. Brewster.....Fieldon
M. Bloomfield .....Joliet
L. Brannon .....Joliet
J. P. Browne.....Plainfield
H. Brown .....Peoria
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F. A. Butterfield.....Dakota
C. F. Baccus.....Woodstock
C. M. Bumstead.....Monticello
W. F. Buckner.....Watseka
E. L. Brown.....Bloomington
L. D. Barding.....Moline
L. S. Brown.....Hillsboro
Wm. R. Bradley.....Galesburg
Blim & Blim.....Chicago Heights
C. F. Butterfield.....Rock City

Balcke & Clary....Pekin
Henry P. Bagley....Galesburg
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H. W. Bundy....Pesotum
Marion K. Bowles....Joliet
J. G. Barnhizer....Forrest
S. M. Burdon....Lowpoint
A. L. Brittin....Athens
B. M. Barringer....Emden
L. V. Boynton....Vermont
J. R. Bryant....West Point
A. B. Barker....Peoria
J. W. Barrow....Carbondale
F. C. Bowker....Morris
F. T. Brenner....Quincy
J. D. Byrne....Du Quoin
Wh. Barnes....Decatur
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E. E. Barbour....Peoria
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T. L. Chiasson....Neponset
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V. J. Cohenour....Joliet
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T. E. Conley....Park Ridge
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T. C. Economus....Moline
Royal L. Eddington....Lacon
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A. Houston....Joliet
S. W. Hopkins....Walnut
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J. M. Mitchell ..... Pontiac
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Lay Educational Committee.
25 E. Washington St., Chicago, Ill.

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The lay educational campaign cannot be prosecuted without funds; it must be supported by popular subscription. Every doctor should subscribe to this worthy cause. Serious disease diverted from the incompetent will result in the saving of thousands of lives and will prevent much permanent invalidism.

Our lay educational campaign is achieving two great objectives: A gradual but ultimate restoration of the medical profession to its merited place in the public sympathy and confidence and the inestimable benefits to humanity through the consequent prevention of disease and the preservation of life.

For the convenience of those who have mislaid their letter of Appeal from the State Society, we hereby reproduce the pledge card:

Please sign and mail to the Illinois State Medical Society.

To the Officers of the Illinois State Medical Society and Members of the Council:

"I am in accord with the lay educational campaign unanimously adopted by the House of Delegates of the State Society and of the plan recommended by the Council of the Society, and as evidence of my desire to co-operate with the Officers of the Council and of the State Society, I hereby enclose my check for $..... to aid in defraying the expenses thereof: Make Checks Payable to the Illinois State Medical Society.

Name .....M. D.
Street .....
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"Sign the above pledge card, make out a check payable to the Illinois State Medical Society and mail both in an envelope as follows:

From
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ILLINOIS STATE MEDICAL SOCIETY
c/o Cashier, Sheridan Trust and Savings Bank,
4738 Broadway, Chicago, Ill.
Lay Educational Committee.
25 E. Washington St., Chicago, Ill.

HE NEVER RETURNED

Nervous Woman (to persistent beggar)—If I give you a piece of pudding you'll never return, will you?

Beggar—Well, lady, you know your pudding better than I do.—*Chicago Tribune.*

WAKEFUL FEATURE

Mother—"Is daddy asleep?"

Betty—"Yes, mother—all except his nose."—*London Humorist.*

Correspondence

BILLS IN THE ILLINOIS LEGISLATURE THAT MEAN MUCH TO ILLINOIS PHYSICIANS

Chicago, March 2, 1925.

To THE EDITOR: Your attention is invited to the following bills now pending in the Legislature:

H. B. No. 82—Woman's 8-Hour Bill.

H. B. No. 90—One Day's Rest in Seven Bill.

H. B. No. 82 prohibits the employment of women for more than 8 hours any one day. Graduate nurses only are exempted from its provisions so far as the bill applies to hospitals. The bill also contains a provision permitting women to work an additional 2 hours in any day, in emergencies, providing such emergency employment to be immediately reported to the State Department of Labor whose lay inspectors will subsequently investigate the merits of such emergency employment.

H. B. No. 90 provides for one full day's rest in seven for all employes (male and female) in any occupation and makes no exception for hospitals.

Hospitals must operate 24 hours a day and 7 days a week. Their patients require constant attention during every hour of the day. Emergency and accident cases are brought in at all hours and must have attention immediately.

Both these bills will seriously interfere with the care of the sick and injured. Few if any hospitals work their employes more than 8 hours a day and none over 10. Hospital employes, including nurses both pupil and graduate, are notoriously healthy, are under constant competent medical supervision and are generally well cared for and contented. The exemption of graduate nurses from the provisions of this law is of no benefit to the hospitals. Only a small percentage of the graduate nurses in the state hold institutional positions and their duties are largely supervisory. Every other employe in the hospital has an essential part in the care of the sick patient.

The imposition of any such law as this upon the already overburdened hospitals is unwarranted and unnecessary.

The membership of the Illinois State Medical Society should also be interested in both these bills.

Your co-operation is solicited to the extent of giving this matter as much publicity as possible and in calling upon your membership to communicate immediately and repeatedly with the members of the Legislature (both Senators and Representatives) in their respective districts and protest against the passage of these bills until they are finally defeated.

E. T. OLSEN, M. D., Secretary,
Illinois Hospital Association.

AUTO BILLS IN ILLINOIS LEGISLATURE THAT SERIOUSLY AFFECT PHYSICIANS

March 2, 1925.

To THE EDITOR: Your attention is invited to the following bills now pending in the Legislature:

H. B. (?). Providing for a tax of 2 cents per gallon on gasoline.

H. B. 103. Introduced by Representative Poffers. Provides that every outomobile owner applying for license must furnish indemnity bond in the sum of $5,000. Must also show financial ability to pay any damage incurred.

Inasmuch as these bills will affect every member of the medical profession in the State I take the liberty of calling your attention to them in order that you may give the matter such attention as you deem necessary to secure active opposition to their passage.

E. T. OLSEN, M. D., Secretary,
Illinois Hospital Association.

THREE GOOD REASONS

A doctor who had taken up as his specialty the treatment of skin diseases, was asked by a friend how he happened to select that branch of medicine.

"There were three perfectly good reasons," replied the physician. "My patients never get me out of bed at night; they never die; and they never get well."

POOR FINANCE

A noted financier was taken seriously ill at 90 years old and felt that his end was near.

"Nonsense," said the doctor, "the Lord isn't going to take you until you've passed the 100 mark."

"No, my friend," said the aged banker, "that wouldn't be good finance. Why should the Lord wait until I reach par when He can pick me up at 90?"

—*Business Magazine.*

Original Articles

ADVANCES IN SURGERY THROUGH PHYSICOCHEMIC STUDIES OF THE BLOOD*

WILLIAM J. MAYO, M. D.,
ROCHESTER, MINN.

Knowledge is what we learn from others; wisdom is what we know ourselves. It is the mentality of the surgeon, rather than his technical ability, which is of the greatest importance. The good surgeon is not necessarily a good operator. Knowing when not to operate is as important as knowing when or how to operate.

We say that a certain surgeon has good surgical judgment, meaning that he more or less correctly estimates the vital processes of the patient in relation to his resistance, and visualizes the future course of his illness with a view to initiating such changes as will reduce the risk of a necessary surgical operation, and enhance the prospects of cure. Formerly, with the aid of a few instruments and a small number of chemical tests, the experienced surgeon arrived at a fairly accurate diagnosis and estimated surgical risks in the more advanced stages of disease. Today, the surgeon has at his disposal, through the aid of the internist and the laboratory worker using scientific methods, a vast amount of correct information in the early, as well as in the late, stages of disease. Formerly, estimation of the competency of the kidneys was made by a few simple examinations of the urine, and of the function of the liver by observations as to jaundice. At present, through biophysics and biochemistry, accurate estimations of renal and hepatic functions can be made.

The early masters of clinical medicine, however, did a great work. One must pay homage to men like Richard Bright and Thomas Addison. Bright, in 1828, with a tablespoon, a candle, and a few simple reagents, gave a graphic picture of acute nephritis with its characteristic edema, occurring, for instance, as a sequela of scarlet fever, and ten years later gave a classical description of the cardiorenal manifestations of the contracted granular kidney. Addison, in 1849 described the disease of the suprarenals, which has been given his name, and ascribed the accompanying circulatory asthenia and bronzed skin to failure of the suprarenals to function. In 1855, in a few short pages, described the syndrome of pernicious anemia with a lucidity which has never been excelled. Bright and Addison were masters in the early days, but they understood disease only in advanced and terminal conditions. Today, masters are working with accurate scientific methods, which enable them to make enormous strides in their ability to understand and treat disease in the early, curable stages. As Rowntree says, the old adage, "Methods are not superior to masters," in the light of the knowledge of the present day, should be paraphrased to "Masters cannot ignore methods."

Sir William Bayliss said that there was no line of demarcation between physics and chemistry. In other words, it is only under certain physical conditions that those alterations in the atomic constitution of molecular bodies, which we speak of as biochemistry, take place. In the days of the old masters, only microscopes of very inferior power were available. With the high-powered microscopes of today, one can see particles as minute as 1/10 micron or 1/250,000 inch in diameter. This advance in microscopy has made possible a fine analysis of the cellular elements of the blood. It has definitely fixed the red blood cell, derived from the bone marrow, as the oxygen carrier through its hemoglobin content. If the body is deprived of oxygen, death occurs in from seven to ten minutes. Since 47 per cent of the earth, air, and water, is composed of oxygen, it is surprising that there is no storage facility in the body, either for oxygen or for substances which, under stress, would produce it. Until recently it was believed that the red cells were completely renewed every seven days, but it is now known, through the work of Ashby of the Mayo Foundation, that these cells may live for many weeks. The red cells function, but have no nucleus and, therefore, have no power of growth. Blood transfusion clearly demonstrates the value of the introduction of oxygen carriers as a temporary aid to the rehabilitation of an anemic patient.

The white cells, which are nucleated, are derived from the reticulo-endothelial system, and have been shown to be directly connected with defense and repair. Quantitive and qualitative methods of study, based on cell morphology, give extraordinary knowledge of the power of de-

*Read before Inter-State Post Graduate Assembly of America, Milwaukee, Wis., October 30, 1924.

fense of the white cell in the infections, and the decision to operate in an acute condition may finally rest on a rising white cell count. Without the white cell, there would be no repair of injuries. On the other hand, the diagnosis of leukemia, in the acute form, may depend on the changed morphology of the white cells, instead of on a high leukocyte count, as in the chronic forms.

The relation of the blood platelets, which are derived from the megakaryocytes of the bone marrow, to blood clotting and the purpuras, has become evident, as well as the agency of the spleen in the prolonged destruction of blood platelets, which may cause a drop from a normal count of from 225,000 to 300,000 or more, to 40,000 or less, causing chronic purpura in which splenectomy has given striking curative results.

We begin to look on the spleen in a new light, as a course filter of the cellular elements of the blood which have outlived their usefulness, and as a limited source of white cells. The spleen is a destroyer of worn-out red cells, and if it is enlarged, it may, by an unnecessary destructive activity, bring about anemia. In cases of pernicious anemia, the spleen perhaps functions normally as an executioner of red cells of reduced value, which, however, are capable of maintaining life, and are the best the bone marrow can produce.

Krogh has shown that the walls of the vascular capillaries contain contractile cells, derived from the nonstriated muscle, which are to a large extent self-controlled. Under the circulatory pressure, the endothelial cells of the capillaries permit oxygen and molecular substances, such as the crystalloids and amino-acids, to pass by filtration, osmosis, diffusion, and other forces through the stomas in the wall of the vessel, to serve vital purposes; nutrition, energy, and heat. When certain toxic poisons, for example, histamin, paralyze the nonstriated muscle fibers, causing the stomas in the wall of the capillary to open more widely, large bodies, such as the colloids of the blood plasma, pass from the capillaries into the tissues, causing the state known as shock.

We may, therefore, regard the vascular system as a means of transporting cellular elements in a liquid medium, which we call the blood plasma. Until recently, our knowledge ended there, but today, through physicochemic studies, we are gaining an enormous knowledge of this problem. We see the blood plasma carrying nutrition to all parts of the body, effete substances which are to be eliminated to the emunctories, and chemical substances, spoken of as internal secretions, which coördinate the fundamental vegetative functions. These substances are too minute to be seen with a microscope. The colloid field includes particles from 1/10 micron or 1/250,000 inch in diameter to approximately 1/1,000 micron or 1/25,000,000 inch in diameter. Knowledge of the colloids comes through the fact that the colloid particles are larger than a ray of light, and that with the ultramicroscope they can be seen to reflect or diffract the ray of light. The ultramicroscope determines the presence of colloid bodies, but gives no idea of their size, shape, color, or other significant details. Particles less than 1/1,000 micron in diameter lie in the molecular and atomic field, in which chemical changes take place.

According to Bohr, the atom is composed of a positive nucleus, or proton, surrounded by a negative electron or electrons. The simplest atom is that of hydrogen, composed of one proton and one electron, the latter being in rapid motion around the proton. Henry Moseley, a talented young Englishman who was killed in the Gallipoli campaign at the early age of twenty-eight, analyzed the atom by the refraction of the x-ray, an electromagnetic vibration of only 1/100,000,000 inch in length, smaller than the atom. He demonstrated that there are ninety-two possible elements between hydrogen, the lightest, and uranium, the heaviest, and that between each two elements in the progression in atomic weight, there is the weight of one atom of hydrogen; that is, an atom of oxygen has sixteen protons and sixteen electrons, an atom of radium eighty-eight protons and eighty-eight electrons, and an atom of uranium, ninety-two of each. Gold has seventy-nine electrons, and mercury eighty. Miethe has succeeded in removing one electron from mercury and obtaining gold. As a result of Moseley's work, Rutherford, Thomson, and others have been able to fill in all but four of the elements lying between hydrogen and uranium. Many elements are not stable, or contain more than the necessary number of protons or electrons, and these superfluous, easily loosened, or free, electrical units are

called ions, and are responsible for the atomic changes which we speak of as chemistry.

It is in the atomic and molecular field that oxidation takes place and the constitution of the the molecule is altered. Crystalloids, of which glucose is a good example, lie in the molecular field, as do the amino-acids, which are the final results of protein metabolism. We now know that these ultimate products are formed in the liver, for, as Mann has shown by animal experimentation, if the liver is removed, sugar and urea in great part disappear from the blood.

It may seem that this discussion is ultrascientific and impractical, but on the contrary, it is most practical. Today, precise examinations of the blood, for reactions which concern the colloids and molecular and atomic substances, have been raised to the dignity of sound methods of securing information of vital phenomena.

Let us take as an example, examinations of the blood in relation to the kidney. The function of the kidney may be briefly defined as the filtration of noncolloid constituents of the blood plasma through the capsule, and the resorption of threshold bodies in solution through the tubule cells. The kidney is, therefore, chiefly a filter whose function is to eliminate certain metabolites, such as urea, chlorides, and creatinin, from the blood. Urea is listed by Cushny as a nonthreshold body; it is one of the smallest of the molecules, and is not hydrated; that is, it does not change in size by absorbing water. We know that the urea molecule must be roughly about the size of the molecule of the dye, phenolsulphonephthalein, which, Rowntree has shown by intravenous injections, would be eliminated from the blood through the kidneys about as readily as urea would be eliminated. The Rowntree and Geraghty phenolsulphonephthalein test is an accurate guide to the functional capacity of the kidney to eliminate urea. Retention of chlorids in the body, through disturbance of renal function, results in the edemas. Creatinin is another waste material, derived from the tissue catabolism excreated by the kidneys. Estimation of these substances in the blood affords the most reliable prognostic index to renal function.

Finally, the kidney eliminates excess water in order to maintain a proper physical state of fluidity, that the molecular constituents of the blood plasma, glucose, amino-acids, and so forth, may be maintained in the condition necessary to permit chemical exchanges. Eighty per cent of the body is composed of water. Colloid bodies in so-called solution can be seen only by refraction with the ultramicroscope and are held in suspension in fluids, while molecular and atomic particles form true solutions which, according to Arrhenius, may undergo electrolytic dissociation into positive and negative parts which are ionic.

Through studies of the blood has come the remarkable improvement in the results of operations on patients with reduced renal function. Such improvement could not be estimated by the old method of examining the urine. When the blood urea rises above 125, operation becomes most serious, unless it concerns obstruction to elimination by the kidneys. Even when the blood urea is above 300, the well prepared patient may recover from operation, provided the urinary obstruction can be relieved, as in certain conditions of the prostate. When the blood creatinin rises above 5, a serious barrier to excretion is present, and the patient is in danger; when it rises above 10, the patient will probably die unless the barrier is removed. The percentage rise and fall of the blood chlorids must be watched with care, but is not so striking as in the case of urea. In chloride retention, edema may occur. In high intestinal obstruction, the chlorids of the blood may fall markedly, and this is frequently associated with an alkalosis and its clinical manifestations.

If the renal function, in relation to elimination of urea, chlorids, and creatinin, is so reduced that the urine cannot concentrate normally, a large intake of water is necessary. That is, if the urine normally is excreted in concentration of 1,020, and the kidneys are able to concentrate only to 0,005, the patient must take extra water to insure proper elimination through the kidneys. If the renal incompetency is due to the stage of cardiac insufficiency, the patient may not bear the amount of water necessary for elimination, and a secondary edema may develop. Measures must be taken to obviate this cardiorenal complication. Under intelligent management, the condition of a patient with most serious toxemia from renal insufficiency may be improved, and a successful operation performed.

Note what may be done for the patient with the information derived from studies of the blood. Rehabilitation of the blood in cases of renal incompetency consists in giving fluid in

the form of sodium chloride and glucose solution rectally, subcutaneously, or, if the condition is acute, intravenously. Glucose maintains heat and energy in the body and reduces the metabolites in the blood by preventing destruction of tissue. If the blood chlorids are high, water without sodium chlorid is indicated, but as a rule they are low and large quantities of hypertonic sodium chloride solution are given intravenously.

In high intestinal obstruction, the chlorids of the blood go down while the urea and creatinin go up. The problem is to restore the body fluids with water, which also aids elimination of urea. To restore the chlorids, chlorid of sodium is given, not bicarbonate of soda, in the water, since alkalosis exists. Glucose is added to maintain oxidation in the body for heat and energy, and to check destruction of body tissue. This treatment will reduce the toxemia. High jejunostomy in cases of definite obstruction may become necessary, thus preventing toxic intestinal contents, through antiperistalsis, from reaching the upper jejunum and duodenum, where absorption takes place, causing profuse vomiting and dehydration. Many lives may thus be saved, and curative operations for the relief of the primary condition made possible at a later date, as shown by Balfour and McVicar.

Owing to precise methods of estimating blood sugar, we are today able to operate on the diabetic patient properly rehabilitated, for general surgical conditions, with a mortality not exceeding that of the average, as shown by Wilder. The surgical mortality in cases of jaundice in which patients have been properly prepared, has been reduced from above 10 per cent to less than 3 per cent, as shown by Walters. Last, but by no means least, by the use of the Rowntree-Rosenthal test with the intravenous injection of the dye, tetrachlorphthalein, we are able acculately to gauge the functional capacity of the liver, thereby avoiding many deaths from toxemia due to failure of hepatic function. Such deaths previously were charged to the lungs, the kidneys, the brain, and the heart, when, as a matter of fact, these organs were not the cause of death, but merely the executioners.

I have been privileged to see my colleagues, the internists, and laboratory workers, evolve scientific methods for examining the blood, and apply them in cases in which formerly operation, unaided, would have meant death, a rehabilitation resulting that indicates a most striking advance in modern surgery.

STANDARDIZATION OF EQUIPMENT FOR THE TREATMENT OF FRACTURES

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ST. LOUIS, MO.

To-day we are splendidly equipped for the treatment of fractures. We are unlimited in the use of the X-ray, whereas only a few years ago many patients could not have this privilege. To-day the facilities for transportation are such, that almost under any conditions, the patient can have the benefit of X-ray examination. Our mechanicians and craftsmen are so skilled in making appliances that there is scarcely any conceivable type of fracture that cannot be splinted. In some of our hospitals we have highly specialized services where fractures can be given intensive study, and our numerous text-books are good upon this subject so that the best methods can be made available in the hands of every practitioner. Notwithstanding all of our advantages, however, there is great confusion regarding the selection of methods and appliances and often it is very apparent that the simpler teachings in the treatment of fractures are ignored.

Transportation of Fracture Cases. In the transportation of fracture cases whether the scene of action is nearby or whether it involves a long journey by train, we see most flagrant treatment, or lack of treatment, in the handling of these cases. It is often refreshing to regale ourselves with the very simplest rules of treatment in order to bring us to our senses.

The great outstanding principle in the treatment and transportation of all fracture cases is to prevent and treat the patient for shock. In shock the patient is cold, and if he is raced across miles of city pavement in a cold ambulance without hot water bottles and warm blankets you have only added to his traumatism. If the fractured member is not immediately splinted he has had the additional shock caused by the broken ends of the bones continually stabbing him in the soft, unprotected parts about the fracture. The time-

*Read before Section on Surgery, Illinois State Medical Society, Springfield, May 7, 1924.

honored principle, that the extremity above and below the fractured member should always be immobilized, is apparently forgotten, because cases are received at the hospitals with the leg splinted and the foot dangling. In the City Hospital at the present time, not the least attempt is being made on the part of the ambulance attendant to immobilize the limb or alleviate the suffering of the ing for transportation. We are attempting to patient. We are no further advanced than in the days preceding the Civil War. If the victim is fortunate enough to be injured in a plant with a first aid station, he may receive adequate splintcorrect this evil and the responsibility does not rest with the ambulance driver, but is upon the shoulders of the medical profession which does not insist in a two-fisted manner that first aid be properly administered.

The Lidston splint with permanent foot-piece is undoubtedly the second best splint for the transportation and primary treatment of fractures of the femur and upper tibia, but it does not give extension. For this reason, the Thomas leg splint is the "splint of splints" for the transportation of fractures of the lower extremity. These splints, in a comparatively small assortment of sizes, are easily fitted and require no mechanical ability in their application. With a clove hitch about the foot, with the shoe on, and no attempt to remove the trousers or clothing, fixation and extension can be maintained from the time the primary treatment is given until the patient is in permanent extension in the hospital. Therefore, unless plaster of Paris is used in the treatment of the fracture of the femur, there is never any occasion to use any splint except a Thomas ring leg splint or the original Hodgen splint.

Incomplete Immobilization. The pillow splint is a good splint for a Pott's fracture if it is so applied that the foot is immobilized. Theoretically, it is ideal but when we go to analyze this method of early splinting, we see there are several defects. First, the thigh above the fractured tibia should be immobilized in compliance with the law stated above that all parts above and below the fracture should be immobilized. This the pillow splint does not do and again the foot must be immobilized. The pillow splint does not allow any early attempt at a reduction of a fracture because it permits too much freedom of motion. Then, too, it can be made too tight, is cumbersome to handle for X-raying.

In the St. Louis City Hospital we have adopted the policy in all cases of fracture of the leg to roll out a plaster slab bent up to include the foot and extending one-half way up the thigh. This is built up to one-half inch in thickness, extends around the thigh and is just wide enough to extend one-half way around the leg. An early attempt is being made to reduce the fracture and apply this type of splint well packed anteriorly with cotton. After the swelling has disappeared, if the leg is in good position, an anterior plaster slab can be applied and the patient is able to be up and about.

Tight Bandages and Splints.[1] A discussion of the treatment of fractures is incomplete without mentioning the dangers from tight splints, plaster of Paris and simple bandages. The

Fig. 1. Wooden triangular frame to be used in fracture of the humerus; note rest for forearm and right angle iron bar for extension. (Splint designed by Doctors Steckbauer and Nealy, Saint Louis City Hospital Resident Staff.)

writer has personally seen three cases of gangrene of fractured extremities where the circulation had not been injured but where tight plaster of Paris and bandages had been used. After the splints have been applied, if there is swelling and blueness of the extremities beyond the fracture, accompanied by severe throbbing pain, this should be a positive indication that the splint or other constriction should be removed until the pain is relieved. Volkmann's ischemic paralysis still occurs too frequently and is invariably the result of tight bandages.

The Triangular Arm Splint.[2] The old-fashioned triangular wooden frame arm splint has

1. Prevention of Deformities in Acute Surgical Lesions in Children. Jour. Mo. State Med. Assoc., August, 1923, Vol. XX, p. 271.
2. Scudder. Theatment of Fractures. Chapter on Fractures of the Arm.

in some localities apparently dropped out of use. This is unfortunate because it is a good splint and the patient can be made very comfortable in it. It is quickly made and the application is easy. Any position from a complete right angle, to one where the arm is just free of the body, can be maintained. It is not practical in any sense for a compound fracture because it does not give free access where there is infection and liability of abscess formation, but for a simple fracture in any part of the humerus—excepting the supra-condylar fracture—this splint will answer most purposes.

In the Fracture Service at the St. Louis City Hospital, the following procedure is followed in fracture of the humerus. An X-ray picture is taken and if there is an angulation, the splint is so constructed that the arm is maintained in permanent position at the angle assumed by the proximal fragment as shown in the X-ray. At the elbow the splint is so constructed that the support carrying the forearm is at a right angle to the arm support, thus giving comfort and ease of position. It is important that the splint be well padded with cotton particularly at the elbow to allow for the pressure of the internal condyle. In fixing the splint to the body, it is important to have a pad of felt next to the chest wall and a number of layers of plaster of Paris over this and surrounding the body before the splint itself is applied; this gives the arm support against which the splint rests rather than to have it rest directly against the side of the body. This one point speaks for the comfort of the patient. The splint is then secured to the body with plaster of Paris which also includes the arm. Of course this apparatus can be applied with plaster alone, but unless one is quite experienced in the use of plaster, this is a hard appliance to make and it is easily broken if not properly reinforced. Again, by a simple extension out beyond the end of the splint and allowing the plaster to run only to the elbow, strips of adhesive can be applied and extension maintained while the splint is in position. This is rarely necessary as there is very little over-riding in fractures of the humerus.

Occasionally after the triangular frame is made the patient is taken to the X-ray room and under direct fluoroscopic observation the triangle is applied to be certain that the best position has been secured. As soon as the plaster of Paris is dry, X-ray pictures are taken in two directions. This apparatus can usually be applied at the end of the 4th or 5th day following the fracture, as the swelling is generally about reduced by that time. With this splint, the patient is able to be out of bed by the end of the first week. We have not been able to convince our patients with fractures of the humerus that they are bed patients, and most of them object very seriously to any form of the Thomas arm splint that requires them to stay in bed.

In fractures of the lower third of the humerus,

Fig. 2. Triangular arm splint in position, fixed to the body with plaster-paris. Note extension and Spanish windlass made with twisted rope and tongue depressor.

we prefer a firm immobilization. We are inclined to believe that a large number of cases of non-union of this class are due to incomplete immobilization. In the last three years we have not had a single case of non-union nor have we had a single fracture of the humerus that could not be treated in this splint. Remembering that this splint is not to be used for supracondylar fractures and is not always successful in certain fractures of the surgical neck of the humerus.

Fractures of the Upper Half of the Radius and Ulna. In this particular type of fractures, one of the most important points to watch and the most frequent mistake that is made is in neglect-

ing complete supernation. After pronation once becomes fixed it is almost impossible to regain supernation. The simple coaptation splints will probably give this position but they will not assure it. It is necessary in order to assure absolute supernation, to have the anterior splint so constructed that it bends acutely at the elbow and extends partly up the arm. Again this splint should extend down to and include the hand, and the thenar eminence should be the point against which pressure should be made to hold this position. It is important to maintain this position from the very first treatment of the fracture, and whether or not there is swelling, the apparatus should be applied that will give perfect fixation. This can be easily accomplished by an anterior moulded plaster of Paris splint made at the time and applied, and the arm held in position until the plaster has become fixed. Later, when the swelling in the arm has subsided, the plaster can be more securely fixed to the arm and a posterior shell can be applied to the forearm.

When the fracture occurs in both bones at the same level and there is displacement, if one attempt to reduce under anesthesia fails, we resort to open operation.

In fractures of the elbow joint, I simply wish to call your attention to the fact that the right angle elbow splint is not the proper splint for the treatment of any type of fracture about the elbow joint. It does not conform to the principle that, should an ankylosis occur at the elbow joint at a right angle, or greater than a right angle, the extremity is of comparatively little use and the hand cannot be brought to the mouth.

With the exception of the fracture of the olecranon, flexion (110°) slightly more than a right angle is the position of choice. Whatever splint is devised for the treatment of such fractures must conform to this principle. The Robert Jones traction splint does not fulfill this requirement.

Colles' Fracture.[3] The method referred to in the treatment of Colles' fractures as originally brought out by Dr. John B. Murphy of Chicago, whereby a fracture is splinted with the hand in flexion, is (although this was not a routine method advocated by Dr. Murphy) contrary to surgical principles. The theory advanced by Dr. Murphy was, that after reduction has been made, flexing the wrist was the best aid for maintaining position. He accomplished this by placing a posterior plaster mold from the back of the forearm to hand. Theoretically, this position unquestionably gives an extra security but it is pretty generally conceded that a Colles' fracture once reduced stays reduced, and the ones that do not have probably not been completely reduced in the first instance. To understand the incorrect principle of this splint or method, it is only necessary to flex your own hand at the wrist and attempt to close the fingers. If by chance an arthritis should develop, or an unrecognized injury to the small bones at the wrist should prevent a normal extension of the hand, the gripping power of the hand would forever be lost. This method does not conform to surgical principles; since, when injuries occur about the wrist joint, the hand should be kept in a semi-extended position maintained either by an angulation of the splint or a large pad placed in the palm. This principle has been particularly emphasized by Sir Robert Jones of England and all splints must conform to it to be correct.

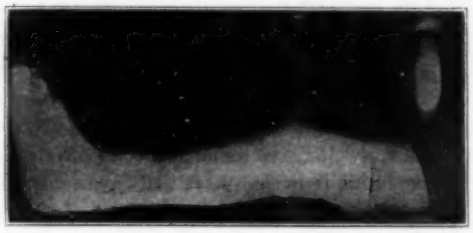

Fig. 3. Simple cast applied at time of accident to all fractures of the lower leg. This cast is molded to fit the leg from a piece of plaster slab. Note that it extends only half way around the circumference of the leg and gives firm support to the foot.

There has been no attempt in this paper to cover the general field of fractures but rather to call attention to a few definite types and to note certain errors made in their treatment. Unfortunately, our mechanics and appliance men are not doctors and the majority of shops where the appliances are made are not in any way under the control of doctors, but it is left entirely to the discretion of the mechanician to build the splint as he sees it. In turn this splint is handed to a group of salesmen to demonstrate and sell to the

3. Outline of Treatment of Fractures—Page 17, Fig. 12. Reprinted from the Archives of Surgery, Jan., 1923, Vol. 6, pp. 172-194. (This pamphlet can be obtained from the A. M. A., 535 N. Dearborn St., Chicago. Price, 10c.)

profession at large, and it follows that in perfectly good faith, splints are accepted which have never been passed upon by a doctor. Many of them are mechanically wrong and again many of them do not conform to surgical principles. I was recently advised to buy a splint in my office —it was a Jones humerus traction splint—and was told that this splint could be used for all fractures about the elbow joint. Undoubtedly, such statements lead to misinformation among the general medical people who are not continually treating fractures and such ideas probably account for the large number of mishandled suprachondylar fractures of the humerus—a fracture that can never be treated in a right angle splint.

In the Thomas splint, the mistake so frequently made in building the splint is that a proper angulation of the padded ring is not made and again the ring is made circular rather than slightly oval. The principle of the Thomas splint is that traction is made against the foot of the splint and counter pressure is made against the ischium. If the splint is so small that the ring will not fit up to the ischium when counter pull is made, swelling is liable to result in the leg. If the splint is too large, it will invariably slide over and press against the perineum. In elderly people it is liable to cause pressure sores. If these minor details are not carefully watched in selecting splints, good results cannot possibly be expected.

In 1915 I had an opportunity to serve in a British Hospital Unit, and not only to observe but to follow out their method in the treatment of fractures in a Base Hospital, also an opportunity to visit the hospitals among the French and Belgians. In Paris I found methods in the treatment of fractures of the femur, for example, that were so radically different not only as between one army and another but in the different hospitals of the same army, showing that no one was making any real advance in treatment except the American Ambulance Hospital under Dr. Blake, which was developing a standard equipment. When I returned with the American Army in the Spring of 1917, I found that a decided improvement had been made in the treatment of fractures but still no definite attempt at standardization. In 1918, largely through the efforts of Saint-Clair of the British Army, certain types of equipment had been selected and established as standard equipment and the result was that in every British hospital the equipment and method of treatment became the same. At this same time a group of men in the American Army in conference decided upon and accepted certain types of splints which had proved to have given the best results in the hands of the French and British allies and with comparatively few changes and modifications these splints were adopted as standard and were made in quantities to be used by the Expeditionary Forces in France. In both the British and American Armies, doctors as well as hospital enlisted men were instructed in the application of these splints and the result was that not only were our medical men adept at splinting fractures, but the enlisted men of the medical department as well, understood the principle and were able to splint and sling up practically any type of fracture. The result of this high type of work was that never in the history of fractures had there been such perfection developed as that period in the last year of the world war, and why not apply this lesson gained through military experience to our private work? The result would be two-fold in its value. First, it would give an ideal equipment of thoroughly tested standardized splints and methods and again in the case of a national emergency the subject of the splinting of fractures would be developed to the highest point of efficiency. At present there is a committee on fractures and standardization composed of members of the American College of Surgeons which is investigating and studying this question. Reports from this committee will be standard. Before splints are put on the market for sale, they should be passed upon by some competent committee and finally have the sanction of the Surgeon General's office.

If every hospital, every corporation, every medical organization and, finally, every individual doctor would limit their methods and splinting appliances to only those that have become standard through years of use, or to the later methods that have been accepted by the Surgeon General's office, or by the standardization committee on fractures, they will have simplified their technique and will have done away with the cumbersome and complex types of splints. Furthermore, this will simplify and make more definite the teaching of fractures.

DISCUSSION

DR. J. L. WIGGINS, East St. Louis: Dr. Rainey's paper is timely. We could offer the same comment had it been advanced from the time efforts to treat fractures were first intelligently made down to the present. Hippocrates, were he awakened from his long sleep, would open the discussion of this paper with practically the same remarks.

It is hard to understand why through that long period when fractures occupied the pinnacle of major surgery there had not been a more concerted effort toward standardizing their treatment. Yet, men of equal experience and opportunities pursued measures, which in many instances were at variance with the mechanics of adjustment, as well as the known anatomical balance. This attitude is not alone a criticism of the past, but has dragged its errors into the present. We find that even now in our large best equipped hospitals, where the elimination of nonessentials is expected, and the adoption of the improved methods imperative, methods are still in vogue which have no virtues to recommend them except the honored names of their originators. While the past had its full measure of errors, there was a period after the surgical renaissance of some 35 years ago when morbidity, the result of exaggerated or forced treatment, had its full measure of bad end results. While formerly there might be deformities with mild functional errors we escaped Volkman's contracture or destruction of members from tight bandaging.

One truth has been emphasized in our efforts toward standardization, there must be a comfortable maintenance of axial line. For this purpose there can be no better appliance in most cases of fracture of the humerus than the triangular splint, which Dr. Rainey has shown us. Could we follow this idea and select splints equally efficient in fractures occurring at other points, laying stress on the exceptions, but emphasizing the rule, there would be less chaos in the minds of those who have occasion to treat these injuries only at long intervals. In addition to the tight bandaging and resulting Volkman's contracture to which the essayist has called our attention, it might be well to consider the result of improperly reduced impacted Colles' fractures, when the ragged posterior edges of distal segment digging into the tendinous sheaths is the cause of so much disability and mutual disappointment. The late Dr. Murphy laid stress on this much overlooked condition.

While our text-books mention many splints for fracture, all will agree that there is probably one splint that is best adapted. There should be little difficulty in agreeing on the proper one. Even with a proper selection, we must not overlook the fact that any splint is efficient only through its intelligent application. Illustrating this point the late Dr. Hodgen on one occasion at the St. Lous City Hospital showed two case of thigh fracture. In one emergency, treatment was given by a teamster, the other by a surgeon. The teamster had placed the injured limb in a trough made of bed slats, comfortably resting on pillows, well immobilized; the surgeon had utilized a cigar box broken in strips and tightly bound around site of fracture. These cases as an illustration emphasize two points: one that the splint used in any case, no matter by what name it is known, becomes the individual splint of the surgeon using it. The other point is in the matter of transportation, which Dr. Rainey speaks of. When we realize that first attention is the autocrat of final results and that "As a tree falleth there it will be" we have gone far in the solution of many of our difficulties in the treatment of fractures.

DR. J. M. NEFF, Chicago: I was much interested in hearing what Dr. Rainey had to say, especially about Colles' fracture, and Dr. Murphy's method of treating them. I was with Dr. Murphy for about 11 years and it was during this time that he developed the treatment of Colles' fracture. His contention was that the proper treatment was to increase the deformity and then bring it forward and downward so that the silver fork deformity was entirely reduced. His practice was not to place the wrist in full flexion but to let it rest over the arm of the chair after reduction so that it was perfectly comfortable. A light posterior plaster cast was applied and left on for 4 or 5 days after reduction. The cast was then removed daily and massage and passive motions used until the fracture was united. I saw a great many cases but never saw a poor result.

Another thing which Dr. Rainey mentioned was that a right-angled splint for fractures of the humerus was not always applicable. I remember a case I saw a year ago, a very heavy man with fracture of the surgical head of the humerus. I put it up in a right-angled splint. The X-rays showed the distal fragment was not in alignment with the proximal so we took it down and put on a Jones' splint with the arm at the side. The apposition and alignment were perfect.

Dr. Rainey mentioned some of the things that occurred in France. We saw a great many simple fractures. I think Dr. Rainey will remember how we treated those fractures. We plated every long bone in the body. I am not advocating plating of all fractures but in military practice where they are simple I think it is the best method. In the British Military Base Hospital we were able to get the patients out in ten days by plating fractures, according to the Lane technic. We did not have a single case of infection at the 23rd General Hospital. I am not advocating that as a universal method of treating fractures but in military practice it is desirable because you can rid the hospital of patients in a very short time.

DR. T. J. SULLIVAN, Chicago: Without wishing to deter from the teaching of Dr. Murphy, because we all admired him, I desire to state that the anatomy is still more important. Colles' fracture is always produced when a person falls forward and puts out his hand to save himself. The same fracture can be produced on the cadaver. Place the arm on the table, have your assistant draw the arm back and with a large dissecting block, make a sudden severe blow and you can produce a Colles' fracture on the cadaver.

Turn the arm over, open up, dissect it and what have you? You have on the anterior surface a very thin periosteum which very easily fractures. It tears across. You have on the posterior surface a very thick ligament. It is that ligament untorn and still attached that is responsible for the position. To reduce that, always give an anesthetic unless the patient is in shock, and some of them are. To reduce the fracture reproduce the fracture, bring it back with all the force you can with the elbow down on the table and with the thumb right on the fragment, bring it back if it is disarrangd because it is nearly always horizontal. It will slip back. If you do not do that you will find it sticks tight. After it is in position it makes no difference what splint you use. We used to feel that it was a good thing to use a strip of adhesive plaster. I would do what Dr. Neff suggests—take off the splint daily and produce passive motion. At the end of three weeks you can show a patient with a perfect arm, perfect motion and freedom from pain.

This work was first brought out by Moore of Rochchester, later on worked out and fully illustrated by Pilcher and later by Donald MacCrae.

Another thing, it was he who worked out and taught the treatment of fractures of the humerus in the straight position and with passive motion you get good apposition and good results.

No doubt it would be a very good thing in all fractures to be transported to give the patient at the time of fracture, a half grain of morphin hypodermically. That is a time morphin is valuable. Morphin, one-half to three-fourths grain, hypodermically, given to the severely wounded is much to their benefit because it aids hemostasis and puts the muscle at rest.

DR. W. R. RAINEY (closing the discussion): I do not know whether or not Dr. Sullivan misunderstood me. In supracondyloid fracture of the elbow joint you never use a splint in the straight position. The only way to insure keeping the long fragment in position is to put the arm up in acute flexion. When you get such a fracture always make the patient move his hand for questionable nerve involvement, and if you put the arm in flexion, feel the pulse to be sure you have not cut off the circulation.

If you have a supracondyle fractice the muscle belly of the forearm will act as an aid to keep the fragment back in position, when the forearm is flexed on the arm. Otherwise you will get a posterior displacement of the condyles and the proximal fragment slides anteriorly.

POPULAR INSTRUCTION IN DIPHTHERIA*

MR. CHARLES F. GLUECK,
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It is indeed a pleasure and a privilege to be invited to address the Illinois State Medical Society, at its annual meeting, on the subject of "Popular Instruction in Diphtheria Prevention."

*Read before Section on Public Health and Hygiene, Illinois State Medical Society, Springfield, May 7, 1924.

No attempt is made in this paper to discuss questions of medical or scientific import. It is rather the object to illustrate a method by which the public can be informed of the achievement of science in preventing diphtheria. This should be in such form as to give sufficient knowledge to remove the dread and hesitancy usually found concerning serum treatments, which is caused by ignorance of the subject.

The entire object is to instill confidence and create a demand for immunization against diphtheria by the toxin-antitoxin treatment. Parents are always advised to consult their family physician for further advice on the subject.

In educating the public concerning the value of diphtheria prevention, the main problem presented is to convince the public that diphtheria is not an inevitable dispensation of Providence, but that each parent has it within his or her power not only to protect his or her own child from this disease, but, in addition, to assist in stamping out the disease in the community.

The problem involves a number of minor problems. The public must first be informed of the true nature and menace of diphtheria.

In order to do this is it necessary to show that diphtheria is a germ disease; that its cause—the diphtheria bacillus—is known; that it is transmitted from person to person; that it is a disease particularly of childhood; that as soon as school opens in September the disease spreads from chi'd to child, the majority of cases in every year occurring between the first of September and the first of January. The disease is then carried home by the school children to their younger brothers and sisters, who, on account of their lower resistance to the infection, succumb to it.

The manner in which the disease is spread should be explained. The public should also be given some idea, not only of the symptoms of the disease, but of the effects produced by the disease in the body, and the reason for the unfortunate complications and after effects.

The second task is to explain why, in spite of our full knowledge of diphtheria, we still continue to have cases and deaths from this disease. The fundamental reason is that over a third of the diphtheria deaths occur in individuals who have had no medical attention or at best have had such attention only during the terminal stages of the disease. This conditions exists in every community. The parents must be aroused to the danger existing in every case of sore throat

and the necessity of calling a physician to give such treatment as he may deem advisable in order to prevent diphtheria.

The objection on the part of some parents to permit the administration of antitoxin, before a positive report is received from the laboratory, is still a cause for a large number of deaths due to diphtheria. Undoubtedly there is a great need that the public be advised of the danger of not permitting the family physician to administer antitoxin immediately when there is a suspicion of diphtheria. This attitude of parents is almost entirely due to the inherent dread which they seem to possess regarding the use of serums.

Unfortunately, the fear still exists that illness or other unfavorable reaction takes place when antitoxin is administered in cases which laboratory tests have subsequently shown to be negative.

Some of the false impressions that exist concerning the dangers from antitoxin must be dispelled. It is always desirable to explain that antitoxin is an emergency measure, intended either to protect a person who has been exposed to diphtheria or to combat an infection already present. It should be emphasized that the protective effect of antitoxin is of short duration and that the immunity conferred lasts for a period or not over two to four weeks.

It should then be explained that an attack of diphtheria does not necessarily protect one who has recovered, against a future attack of the disease. In this connection, it is also desirable to correct the impression that the heart failures and paralysis following diphtheria are caused by antitoxin.

Other obstacles to be overcome are the reluctance of the public in consenting to have children undergo any treatment when they are well and when diphtheria is not prevalent, also the fear of any treatment involving the use of a syringe and hypodermic needle.

There is no doubt that the active opposition to all measures of preventive medicine carried on by the well organized and amply financed anti-vaccinationists has an effect on the popular imagination. The average individual, knowing little of the benefits which he has received from preventive medicine and still less of the principles involved, conjures in his mind (particularly when stimulated by the lurid literature of the anti-vaccinationists), distorted pictures of the effect of such injections as those involved in the Schick test and active immunization, but when the details of the test and immunization are clearly presented to him, these fears disappear.

These problems can be met in a variety of ways; primarily, by straightforward talks to parent-teachers' associations and other public groups, through articles in newspapers, through pamphlets, and with the aid of motion pictures. The most important influence, however, is that of the family physician.

The success of any efforts to inform the public of the value of diphtheria prevention and to encourage the people to avail themselves of the facilities offered, depends upon a number of factors. The confidence of the public can only be gained by telling the people the principal facts, free from any exaggerated statements, and by showing them, either by actual practice or by means of motion pictures, the technique of the test and immunization.

So much depends upon the personality of the speaker, upon the sincerity and conservatism of his arguments and upon the truthfulness of any depiction of the methods used. The public is very quick to grasp any facts that are in line with their own experiences, and they are equally quick to doubt any statements or pictures that are contrary to their experiences.

The response of various audiences depends not only upon the facts already mentioned, but also upon the nature of the audience itself.

It has been found that audiences made up largely of foreign born parents will eagerly avail themselves of diphtheria prevention measures, if some one in whom they have great confidence advocates these measures.

This is also true of the parents of the children in parochial schools. If the priest and the sisters recommend these measures to the parents, a favorable response comes from a very large majority.

In other audiences, composed of average Americans, there is a tendency on the part of the individuals to place their opinions above those of the health officials, and it is this class that is frequently swayed by the statements of the anti-vaccinationists.

Among the most intelligent classes, the parents usually depend upon their family physician for advice. In all the campaigns that have been

waged to popularize diphtheria prevention work, an attempt has first been made to familiarize physicians with the measures involved, and to urge them to apply these measures in private practice. This effort, however, has not been as successful as was hoped, and it is now evident that if diphtheria is to be prevented, we must create in the public mind a knowledge of the true benefits derived from the Schick test and active immunization, so that parents will demand that their physicians immunize their children.

This end can best be accomplished through the schools where the children serve as a direct means of communication between those carrying on the work and the home. In this way a large number of parents are reached who are likely to discuss the matter in the family circle and then appeal to their family physician for advice.

In the school campaigns, in addition to addresses to the parents, it is desirable to place in their hands some short attractive pamphlet, describing the points already discussed, such, for instance, as the one I have here. At the same time, through other agencies, such pamphlets can be sent to parents throughout the country.

Then, through the medium of motion pictures, particularly when these pictures bear the endorsement of either a state or city health department or the approval of such influential agencies as the large life insurance companies, the public can learn, not only the whole story of diphtheria and its prevention, but they also come to realize that these measures are advocated by organizations in which they have great confidence. This means of visual exposition is one of the most impressive ways in which the public can be taught the true nature of diphtheria, and the simplicity and harmlessness of the method of prevention.

The opposition maintained by the organized anti-vaccinationists can best be overcome by meeting their objections squarely, and by asking the public to choose between the advice given by their family physicians or the advice given by organizations which have never done anything to save human lives.

The Life Conservation Service of the John Hancock Mutual Life Insurance Company was prompted to give publicity to the Schick test and active immunization by the apparent need of a better understanding on the part of the public of this means of preventing diphtheria.

Field investigations were conducted, based upon which studies were made, in order to ascertain what method of publicity would give promise of effective results. It was finally decided that a motion picture and a printed pamphlet would probably prove to be the best solution.

The motion picture which was produced as a result of this investigation depicts the hesitancy which the average family has in submitting their children to a serum treatment, and shows the danger incurred by delay and the consequent penalties of diptheria. The last part of the picture illustrates the simplicity of the Schick test and the toxin-antitoxin treatment. This is done in a manner to show that there is no pain, that the treatment requires but an instant, and that a large number of children can be handled in a very short time. They submit with a smile, and the entire picture is designed to instill confidence in and a demand for the treatment. Just before the close of the picture, a case of tracheotomy is shown as a final reminder of one of the severe penalties of diphtheria.

Dr. Zingher, who is associated with Dr. William H. Park of the Bureau of Laboratories of New York City, directed the production of this motion picture, which the John Hancock Mutual Life Insurance Company offers for free distribution. Dr. Zingher, as you know, is one of the foremost authorities in the work of diphtheria prevention.

By visual education it is easier to reach a large number of people at the same time. This has the advantage of creating widespread interest, which resolves itself into a general community discussion of the subject. Any educational movement, started in this manner, will soon grow of its own momentum. Visual methods of education are the most successful mediums for reaching certain levels of intelligence, and those of foreign birth who have difficulty in understanding the English language.

The point of view of the audience must be considered, and, since visual education is intended primarily for the general public, technical terms should be avoided as much as possible. The subject should be handled in the simplest form possible, in order to get the story over.

The attitude of life insurance companies toward public health is not actuated by purely selfish motives but by a growing realization of a certain responsibility which cannot be avoided,

A recent investigation revealed the fact that five companies paid during a five year period over 22 thousand claims on deaths caused by diphtheria.

The knowledge that most of these deaths could have been prevented places squarely upon the life insurance companies the responsibility for some action of a practicable nature. The John Hancock Mutual Life Insurance Company, which I represent, recognizes this responsibility, and has tried to meet it in the manner described. It stands ready at all times to assist the medical profession in any way within its power, and invites your co-operation and suggestions.

In conclusion I wish to stress the fact that the work of educating the public on the prevention of diphtheria offers unusual advantages because it is one of the few diseases concerning which we have such complete knowledge. There are the laboratory methods to determine the existence of the disease, antitoxin with which to cure it. We also have the Shick test to determine susceptibility and toxin-antitoxin treatment for immunization.

A PLEA FOR COMPULSORY SCHICK TESTING AND IMMUNIZATION AGAINST DIPTHERIA*

C. A. EARLE, M. D.,
DES PLAINES, ILL.

Dr. Hektoen says it takes about ten years for a real discovery in medicine to become generally known and appreciated. It is now 17 years since Theobald Smith first suggested mixtures of diphtheria toxin and antitoxin for active immunization against diphtheria. It is eleven years since Behring announced the use of such mixtures for immunization against this disease.

Since the prophesies of Smith have become realities by the pioneer work of Behring, Park, Lieutenant Hughens and others I am sure that no one can be criticised for at least recommending a relatively safe procedure which has for its object the prevention of such a serious disease as diphtheria.

Convinced as I am from my own experience that T. A. mixtures can, when persistently used, so fortify the system that few if any deaths ought to occur from this disease I wish to go further and place diphtheria prevention on the same basis as the prevention of smallpox viz. compulsory immunization.

More is known of the cause, manifestations, pathology, treatment and prevention of diphtheria than any other disease. It is also known that this disease as it occurs in some lower animals squares exactly with the disease in human kind. In fact the guinea pig is the yard stick for measuring the strength of diphtheria toxin and antitoxin. It would not be safe to give a Schick test nor could the dose of antitoxin be measured if the reactions in the guinea pig were not analogous to such reactions in man.

It can be readily appreciated how important it is that the resistance of the guinea pigs used in these tests should vary as little as possible.

Laboratory workers the world over had observed slight variations in the resistance to diphtheria toxin in guinea pigs, but it was the alert brain of Smith that first showed the cause for these variations, and in the solution of this problem of variation of immunity of the guinea pig Smith unravelled the mystery of active immunity in human kind. He showed that the guinea pigs which had been used in testing mixtures of toxin and antitoxin were thereby actively immunized and in violence to the dictum even of Behring he showed that the immunized female guinea pig transmitted passive immunity to her young, and that this passive immunity of the young was an index of the degree of active immunity of the mother. This was an exceedingly important discovery for it enabled him by measuring the passive immunity of the successive litters of guinea pigs to follow the duration of active immunity of the mother. This duration of immunity persisted for two years and more.

It was in this report of 1907 that he made that memorable suggestion that human kind might thus be actively immunized.

In 1909 Smith again showed that mixtures of toxin and antitoxin produced lasting immunity in guinea pigs and again he suggested use of such mixtures for human immunization. But the prophetic finger of this medical Leverrier was unheeded until 1913 when Behring announced successful human immunization by means of injections of mixtures of toxin and antitoxin. He christened the child of Smith's fertile brain T. A. mixture. This announcement of Behring's was made five and seven years respectively after Smith had suggested

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such mixtures and yet nowhere does Behring mention Smith's name in this connection.

Park of New York was the first to thoroughly appreciate the value of T. A. mixtures and under his direction they have been more extensively used in New York than elsewhere. Thousands upon thousands of T. A. injections have now been given and, excepting the Dallas tragedy, all without unpleasant results in children. I have myself given more than 4,000 injections with no undesirable results except two small abscesses.

As I see it the modern control of diphtheria is 1. Test every child. 2. Give every susceptible child three doses of T. A. 3. Retest in four or five months and repeat the T. A. injections if necessary.

I have come to regard a positive Schick test as an infallible indication of susceptibility to diphtheria and the negative test as evidence of 100% protection against a severe attack of diphtheria. There is an unwarranted mystery surrounding the technique and interpretation of the Schick test. It is not absolutely necessary to inject the toxin into the skin. If it is injected just under the skin the test will not be vitiated. An area of redness ½ of an inch or larger in diameter and persisting for three or four days is a positive test. It is distinctly a color test.

I have always advocated testing every child because at least half of the children of school age will be found to be naturally immune and it would not be scientific to give three doses of anything to a child when it is positively known that it is immune.

Who shall do this work? The family doctor. It requires no skill to give T. A. injections. The technique of the Schick test is easily acquired. The doctor should practice on himself and family before giving it to others. He should also familiarize himself first with the experimental work that Smith did on animals and the work of Park among the school children of New York. The knowledge and skill thus acquired have great potential possibilities, for similar tests and procedures for control of other diseases will undoubtedly be discovered.

The general practitioner will thus be virtually compelled to familiarize himself sooner or later with such procedures if he is to practice the science and art of modern medicine. If he doesn't do it the Government will do it and thus the frightful nightmare of those who fear State medicine may become a reality.

Most of my work has been done in an orphanage of 1,200 children. During my 34 years service there we have lost as many children from diphtheria as from all other causes combined. During the latter part of 1918 we had 85 cases with 7 deaths. Immediately after this we began our Schick testing and T. A. work. We have not had a death from diphtheria since. In the spring of 1923 we had 18 possible cases of diphtheria; all recovered. All but one had given positive Schick tests. It is exceedingly interesting to study the incidence of diphtheria in the eight class rooms, in which these cases occurred, with reference to the Schick test. There were 462 children in these eight rooms. Of these 428 were Schick negative. Among these one developed diphtheria; an incidence of 1 in 428. There were 34 Schick positive children in the eight rooms. Among these 17 developed clinical diphtheria; an incidence of 1 in 2. In two rooms all the susceptible children developed diphtheria, but not one of the 95 immunes got it.

In view of the fact that the evidence is conclusive that children can, without danger, be permanently immunized against diphtheria, is it not time for the state to take steps toward compelling parents to protect their children against this serious disease?

DISCUSSION OF PAPERS OF DRS. GLUECK AND EARLE

DR. THOMAS A. MANN (Jacksonville, Ill.): I have been very much interested in this discussion since I have had some experience in the administration of toxin-antitoxin to school children in North Carolina, from which state I have recently come to take up public health work in Illinois.

In North Carolina I had the pleasure of vaccinating during December, 1923, about two hundred and fifty school children with toxin-antitoxin, without using the Schick test.

North Carolina is giving herself credit for doing a little advance work in disease prevention. There, as in other sections, health officers, however, must be guided by the size of their appropriations in planning their work. When working with only 30 cents per capita it is impractical to do Schick testing, and if we wish to get mass immunization we cannot wait for physicians to do the work, but must go into the schools. I believe that the future will show that most

of our health work must be done primarily through the school children.

In my work in North Carolina I used what I call the voluntary plan. I simply went to the schools and talked to the children, advising them to be immunized against diphtheria, and explained that we would only take the first four grades. In that way we felt that we reached the majority of children who were most apt not to be immune. We had no trouble whatever. We did not ask the parents, but simply went to the schools and took the volunteers. We did the same thing with typhoid vaccination. Typhoid vaccinations among school children in North Carolina, however, have been much more extensive. I suppose there have been one or two hundred thousand children who have been vaccinated against typhoid fever.

I have also done "voluntary vaccination" against smallpox. In January and February of this year I found in Bladen County, North Carolina, that the school children were not protected against smallpox. You will find that all over the country. I have already found it in Morgan County, Illinois.

We can not get the children vaccinated by advising them to go to their physicians. Bladen County has a school population of about thirty-two hundred children. I went into the schools and with two nurses vaccinated twenty-eight hundred children in two months. As with other vaccinations, we only took the volunteers.

It is my opinion that work of this nature can best be done without force. There is no need of having a law. The only force we need is the force of education, then we can get our work done.

CHAS. F. GLUECK (John Hancock Mutual Life Insurance Company, Boston, Mass.): I would like to ask Dr. Mann a question. Did I understand you to say you got only the consent of the children in the diphtheria work?

DR. THOMAS A. MANN (Jacksonville): No, we asked the children beforehand. I generally made a preliminary visit to the schools and advised the children to talk it over with their parents and explained that when I came to immunize I would only take the ones who were willing. With this plan there was no chance for resistance. Vaccinations became popular. One little girl in the first grade who was vaccinated with the others said to me, "Doctor, my mama told me not to be vaccinated but I wanted to be vaccinated anyway, but she won't care."

With all the twenty-eight hundred I think not over a hundred were out of school with their arms and these were home only a day or two. There was of course some headache and febrile reaction with many, but I had explained that to the children beforehand. The best way to do the work is to tell them the absolute truth; never try to deceive a child.

DR. W. C. COOK (Peoria): Dr. Mann is certainly illuminating as to the methods of certain localities. I imagine if I were to pursue his measures in Peoria we would have a riot; as a matter of fact, as one public health official I rather believe from the nature of things we have not progressed so far in public health measures as that it would be safe, it would be sane to follow entirely what our good Doctor has suggested. I personally will go through no other source than the family physician. Naturally we are the foundation in our field efforts to make that co-operation one hundred per cent, but I hardly feel in Illinois, more especially that section of Illinois that I feel somewhat conversant with, that we are at all ready to give those who see State Medicine just around the corner the one grand opportunity that they are looking for.

The other statement that Schicking was not done promiscuously. I rather feel that Dr. Earle, at least he voices my sentiments that it is rather unscientific to do a wholesale TA, without first knowing those who are already immune, and the only stumbling block I see there is the fact that I do know a child may be immune today and a year hence he is susceptible.

In my efforts in Peoria Public Schools I worked odd grades each year, at which time we follow the card that I presume the most of you present are familiar with—it is sponsored by the State Department for physical examination—a record is kept, being the only medical officer of the Peoria Public Schools, serving from two to five hundred pupils, we do and are doing that part with the odd grades which means that each child has this examination and a record is made every other year.

Dr. Mann had a suggestion, I feel, and not being known as a conservative in most respects some of you present may wonder why I would fall in so readily, but I know in the city of Peoria in the north central territory they are not ready for that sort of thing.

DR. H. O. MUNSON (Rushville): I would like to ask this question. In view of the recent ruling of the Supreme Court, how we could enforce immunization for Schick test?

I understand the recent ruling is you can not compel a child to be vaccinated for small pox or diphtheria or exclude them from school. I ask that question for information.

DR. C. ST. CLAIR DRAKE (Chicago): May I ask Mr. Glueck a question?

In the event the local health organization was going to put on a campaign of education against diphtherja, would it be possible to secure those films you have, would you loan them and on what terms?

CHAS. F. GLUECK: I think we have about one hundred twenty in circulation now. They are one reel, one thousand feet, and we usually send a record of the story in printed form. It runs about forty minutes I would say. We have a pamphlet we put out similar to this one (exhibits pamphlet).

DR. C. A. EARLE, Des Plaines (closing discussion): As to the variability of the Schick test, my own work leads me to believe that a child 3 yrs. old or above, who is once Schick negative will always be

Schick negative. Of course a dose of antitoxin given a month before the test would vitiate the test.

Vaccination against smallpox cannot be made compulsory under the present ruling of our courts in Illinois; but in the presence of an epidemic of this disease children can be excluded from schools unless vaccinated. My plea is to place diphtheria on the same basis as smallpox, that is, exclude the non-immunes from school in a community where diphtheria is prevalent.

I think the Doctor from North Carolina is probably right when he states that the great work of diphtheria immunization will have to be done by the state through its health officers.

Dr. J. J. McSHANE (State Department of Health, Springfield): Dr. Munson asked a question. "In view of the recent ruling of the Supreme Court, how we could enforce immunization for Schick test?"

We can not require children to take the Schick test, neither can we require them to be vaccinated but we can exclude children from the schools when smallpox becomes prevalent in a community or threatens to become epidemic. The exclusion is by ruling of the board of health.

There have been a number of decisions relating to compulsory vaccination. The one Dr. Munson refers to is a recent decision of the Supreme Court relative to the exclusion of a child from the public schools of Chicago who refused to be vaccinated.

The Supreme Court held that the health department notified the city superintendent of schools who in turn notified the principal to exclude all children in a certain school where smallpox was prevalent who were not successfully vaccinated for a certain period of time. The Supreme Court held that inasmuch as all exclusion orders must come from local boards of health and boards of education that since there was no board of health in Chicago and no ruling relating to the exclusion of children in this case by the board of education that the superintendent could not require children to be vaccinated.

In Granite City. when the city had a number of cases of smallpox, in the trial of Larner vs. Hagler, the Supreme Court relative to the exclusion of unvaccinated children, held the board of health had the right to formulate rules and regulations requiring that school children be vaccinated when smallpox is epidemic in the vicinity of the school or danger of epidemic may be apprehended. Under this ruling boards of health may require the exclusion of unvaccinated children when smallpox is prevalent in a community or threatens to become epidemic.

DR. S. C. BEACH (Chicago): It happens to be within the ken of my knowledge we have two states only in the United States which have compulsory vaccination laws; one is Rhode Island and the other is Kentucky, and Kentucky is so clever in putting this over that she makes this regulation. You don't have to be vaccinated but an employer can't hire you unless you are. Kentucky gets everybody vaccinated.

THE PATHOLOGY AND BACTERIOLOGY OF PUTRID AND GANGRENOUS PROCESSES WITH SPECIAL REFERENCE TO THE FUSIFORM BACILLI AND VINCENT'S SPIROCHETE*

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Introduction: For convenience, we may divide putrid and gangrenous processes into three large groups so far as their bacterial relationships are concerned. First, there are the gangrenous processes that are caused primarily by the activities of the Colon bacillus and related organisms. These processes occur chiefly in connection with the intestinal tract and the genito-urinary system. Such processes are common in the appendix, in and about the lower bowel, and about the urinary bladder and the kidneys; also especially in the female about the pelvic organs. For example, a large proportion, possibly ninety per cent. of gangrenous appendices is dependent on the activities of B. coli. The second group of gangrenous and putrid processes are those associated with the activities of the Welch bacillus and related anaerobes. Such infections are frequently gasogenic in character and commonly located in the muscular system and the gastro-intestinal system. Frequently the infection results from wounds. This group of infections was brought into special prominence during the recent war. The third group of putrid processes is dependent upon the activities of the fusiform bacillus and spirochetes. This third group is a very large group, possibly larger than the first two groups combined. Their distribution is wide, and the character of the process varied, at times being very extensive and at other times being quite insignificant.

A few words concerning the properties of fusospirochete organisms will be in order, so that the specific pathogenic reactions of this organism may be better understood. Fusiform bacilli and spirochetes are almost invariably found associated. Not only are these two organisms found together, but they are also found in association with a third organism which is usually one of the pyogenic cocci. The particular pyogenic coccus

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co-operating with the fuso-spirochete organisms depends very largely upon the location of the infectious processes. About the respiratory passages it is some member of the streptococcus group that usually works with the fuso-spirochete organisms. About the genitalia, staphylococci are usually the associated organisms. In the intestinal canal apparently both streptococci and B. coli co-operate with the fuso-spirochete combination.

I wish especially to emphasize the importance of this association of organisms in bringing about these pathologic processes, for as a general rule any one of these organisms working alone would not, under the conditions, give rise to the lesions.

The fusiform bacilli comprise a rather large group. They are fusiform in shape, are anaerobic, serophilic, stain readily with ordinary dyes, Gram negative, and extremely pleomorphic. Ordinarily they can be cultivated readily, though difficulties may be encountered in obtaining them in pure culture. Alone, their pathogenicity is extremely limited.

The spirochetes associated with them seem to belong to several varieties, some being large, others small. Cultivation of these organisms is extremely difficult; apparently some have not yet been grown on artificial media.

The fuso-spirochete organisms belong to a group of bacteria that we have conveniently referred to as *opportunists*. By this is meant simply that they are organisms commonly found about the body, leading a saphrophytic life but with potential pathogenic powers. When certain conditions arise leading to a more favorable environment, they are prone to develop, as a rule, quite rapidly and give rise to pathological processes. In this respect, they are quite like many other well-known organisms, such as the pneumococci, streptococci, B. coli, and others.

Normal Distribution of Fuso-Spirochete Organisms: I wish to refer here to a fundamental principle not sufficiently recognized in connection with infectious processes: namely the distribution of infectious processes in the body is very largely determined by the normal distribution of the opportunist organisms causing such infectious. For example, the normal habitat of staphylococci is the surface of the body, especially the skin surfaces, and we know that most staphylococcus infections occur on the skin, in the skin, or in adjacent structures. Even though staphylococcus infections occur in the interior of the body, upon analysis it usually can be shown that the organisms came more or less directly from the skin.

So also with streptococci; these organisms normally occur in the throat and upper respiratory passages and most streptococcus infections appear in these localities.

Fuso-spirochete infections furnish a very striking illustration of this principle. We have in our laboratory made a special study of the normal distribution in the body of these organisms and find that they occur chiefly in four localities; first they are commonly found in the crypts of the tonsils; second they occur in large numbers on and about the teeth; third they are frequently found normally in the intestinal canal in the region of the appendix and caecum; and fourth they are found normally about the genitalia, in the male in the preputial sac, in the female about the clitoris. In studying the distribution of infections by these organisms, we find that such processes occur chiefly in or near these four localities above mentioned.

In the tonsil crypts, these organisms occur in two forms: first, diffusely distributed over the epithelium; and second, in definite small caseous granules. These granules occur in about thirty per cent. of all tonsils that are extirpated. Probably every one with tonsils has them at times in the crypts. They are usually multiple. They are gray or greenish-gray, small, brittle, radiate and have a peculiar offensive and characteristic odor. Ordinarily they do not penetrate the epithelium but remain localized, frequently causing cyst-like dilatations of the crypts. When examined microscopically, these granules reveal at their margins small extrusions which have a structure resembling an ordinary test-tube brush. There is a central shaft made up of one or more filaments, and arranged perpendicularly thereto are innumerable fusiform bacilli and spirochetes. Scattered throughout the granule are many coccal forms, especially streptococci, both hemolytic and viridans.

On the surface of the teeth near the gingival margin, similar granules occur. When examined under a microscope they present a somewhat ray-like appearance with similar brush-like protru-

sions at their margins. Smear preparations of this material reveal many fusiform bacilli and spirochetes as well as streptococci and buccal leptothrix.

Relation to Infection: I will now take up especially the pathological processes that are caused by these organisms and in doing so I will discuss lesions in various localities of the body, beginning with the structures about the head. One of the most typical lesions caused by these organisms is known as Vincent's angina. This lesion appears usually first upon the tonsil or nearby surfaces, and, indeed, very frequently about the edges of the tonsillar crypts. There are two anatomic forms of Vincent's angina, one where the lesion is superficial and not associated with much odor; the other is deep and destruction of tissue is more or less characteristic. The latter is usually very fetid. Examination of such lesions reveal large numbers of fuso-spirochetes. Indeed, at times the organism appears in practically pure cultures. Often, however, pyogenic cocci also appear. The question has arisen as to the source of the fuso-spirochete organisms in this disease. This condition at times appears as distinct epidemics, and in these cases it would seem that the transmission is direct from person to person, as in diphtheria. Other cases appear to be distinctly sporadic and from an examination of the tonsils it would seem that fuso-spirochete organisms from the crypts of the tonsils or possibly from the teeth for one reason or another become pathogenic and cause a localized infectious process.

Ulcerative gingivitis years ago was shown by Gilmer and Tunnicliff to be caused by fuso-spirochete organisms. In this disease apparently when proper predisposing factors are present these organisms, which normally occur about the teeth, grow rapidly on the buccal mucosa and cause a dissolution of tissue, resulting is a lesion somewhat similar to the lesions above described on the tonsils.

Moorehead and the writer have recently shown that these organisms are frequently found in the exudate obtained from chronic alveolar abscesses. They are practically always associated with streptococci, usually the streptococcus viridans. It is the fuso-spirochetes that are largely responsible for the solution of the tissue and for the putrid character of the exudate. For example, in twenty cases of chronic alveolar abscesses, the fusiform bacilli and streptococci were found in all, and spirochetes were shown in association in sixteen. Undoubtedly, in this common condition, the streptococci are the aggressive organisms and may have been the primary agent, the fuso-spirochete organisms entering secondarily but modifying materially the character of the process.

Also in pyorrhea alveolaris and other similar lesions about the mouth, fuso-spirochete organisms are commonly found in large numbers usually growing with pyogens. It may be true that they are at times primary agents, but probably in most instances they are merely secondary invaders taking advantage of certain factors such as vascular disturbances, associated infection, foreign body deposits, diet deficiency disease, etc.

In putrid otitis media, fuso-spirochete organisms are nearly always responsible for the fetid character of the discharge. Usually the otitis media is primarily a coccal affair. When the fuso-spirochete organisms invade the ear secondarily, the exudate quickly becomes putrid in character. The bone may or may not be involved. At times, the fuso-spirochete organisms invade the various sinuses of the head, and so occasionally we have a putrid sinusitis, ethmoiditis, and so on.

Pilot has recently investigated a large series of pulmonary lesions of different kinds including pulmonary abscess, gangrene, and bronchiectasis. The bacteriology of these lesions centers largely around the presence of fuso-spirochete organisms and streptococci. Thirty-seven cases of such infections were studied. The bacteriologic, pathologic, and clinical studies indicate that this type of infection forms a distinct clinical entity. The process as a whole may be referred to as a fuso-spirochete pneumonia, though pyogens nearly always play an important contributory roll.

The lesions are largely in the form of simple or multiple abscesses together with a diffuse form of gangrene. The development of these processes in the lungs depends to a large extent upon such factors as tonsillectomy, general anesthesia, aspiration of foreign bodies, perforating lesions in the trachea, bronchial carcinoma, tuberculosis infections of different kinds especially pneumococcus infections and also upon circulatory disturbances of various kinds. In a few, typical gangrene of this type may develop with-

out evident predisposing causes. It is interesting to know that probably in all cases, the sources of infection relate back to the mouth or throat where the fusiform bacilli and spirochetes normally grow. The prevention, therefore, of these pulmonary infections would appear to lie largely in the proper hygiene of the mouth.

In pulmonary tuberculosis, it is interesting to know that infections with fusiform bacilli and spirochetes are rare. However, occasionally the association of these organisms with the tubercle bacillus does occur, resulting in a diffuse putrid gangrene superimposed on the tuberculous process. In our series, five such cases were studied. These seem to occur more commonly in those patients who have been particularly careless as to mouth hygiene.

Brams, working with us, has directed his attention especially to the occurrence of these organisms about the genitals of the male. Under normal conditions, he found that they occurred in the preputial secretions of fifty-one per cent. of one hundred men. Other organisms commonly associated with them are staphylococcus, streptococcus hemolyticus and colon bacilli. A comparative study of the flora of the normal preputial secretions and the secretions from cases of gangrenous balanitis reveal a striking similarity in both smears and cultures. The conclusion has been drawn from this study that in gangrenous and erosive balanitis the usual source of the fusospirochete organisms is in the normal flora of the preputial sac and not as formerly thought in the buccal secretions. Fusiform bacilli and spirochetes were also found in the normal smegma of twenty-one of thirty-six pregnant women. They appear quite like the organisms found in the preputial secretions of men. Infections caused by these organisms have been known to occur in women and presumably the source of such infections is also in the smegma of that locality. In both male and female, predisposing factors are important in determining these gangrenous lesions of the genitalia.

A considerable amount of investigation has revealed the not uncommon presence of these organisms in the intestinal canal. It would appear that a small proportion of gangrenous appendices, not over five per cent. or thereabouts, have been the result of the activities of the fusospirochete association. Here too, as in other localities, predisposing factors such as foreign bodies, associated infections, vascular disturbances and the like operate in causing these organisms to grow.

It has long been known that serious skin infections of a gangrenous character resulted from bites of individuals, especially individuals having dirty mouths. On investigation, it has been shown that fusiform bacilli and spirochetes usually along with cocci are found in large numbers in such lesions. No doubt these organisms in these instances have been directly introduced by the biting process resulting in a serious type of infection.

Animal Experiments: For experimental production of putrid and gangrenous processes with these organisms, we have found the rabbit especially suitable. Introduction of the material under the skin in suitable amounts in the region of the neck or directly in the pleural cavity will result in the formation of a putrid process, the fusiform bacilli and spirochetes being present in the exudate. The presence of associated cocci, especially streptococci, is no doubt an important factor in determining the progression of the process. The cocci appear to be more aggressive, advancing into adjacent tissues, whereas the fusiform and spirochete forms follow later and cause the gangrene. If the dosage of arganisms is large enough, the rabbit will die within a few days and at the site of injection will be found extensive putrid processes. If this is the pleural sac, the entire cavity may be filled with a stinking exudate, the heart and opposite lung being compressed to one side. Putrid empyemas may readily be produced in a rabbit by the introduction of such material as the tonsil granules, tartar from the teeth, and pleural exudate from gangrenous empyena.

Prevention: In discussing prophylaxis, I must again refer to the principle enunciated in the early part of this paper, namely, that the distribution of infectious processes caused by these organisms is largely determined by their normal habitat. In order to lessen the number of these infections, it would appear reasonable to diminish as far as possible the number of these organisms normally present about the body. While it may be out of the question completely to disinfect for example the mouth or the tonsils, the number of bacteria there may be greatly reduced by various procedures. We now appreciate that diminishing the dosage of bacteria is an impor-

tant element in prevention. Removal of the tonsils and draining of the crypts containing these fuso-spirochete granules are rational procedures to pursue. A frequent cleansing of the teeth, especially between them and about the gums, removal of tartar and pus pockets and in general establishing a clean and healthy mouth would clearly be indicated in this connection. It would appear reasonable to exercise special precautions in persons about to undergo anesthesia for any purpose, especially in tonsillectomy or operations about the mouth or throat. About the genitalia in the male, frequent cleansing of the preputial sac would appear to be practically a sure prevention, and in females the parts about the clitoris should receive particular attention. Circumcision is a sure preventive measure against this type of infection.

Treatment: In relation to treatment, I will merely say that at the present time many of these cases all over the world are being treated with arsenic largely in the form of arsphenamine. For a long time it has been noted that such preparations appear to have a favorable effect upon these infections. Our studies have been largely of a pathological and bacteriological nature and only more or less incidentally have we taken up the treatment of these conditions. On the whole, we have noted several strikingly favorable results following the administration of arsphenamine in bronchiectasis and other pulmonary conditions. Pilot has noted diminished expectoration, disappearance of foul odor of the sputum, less fever and other favorable signs. Of course, old anatomic defects can not be changed thereby. It is evident that the infection should be treated with arsenic as early as possible, and selected cases at least should receive arsenical treatment before more radical surgical procedures such as pneumothorax are employed. In many cases, it may be well to combine surgery and arsphenamine in the treatment.

SANITATION OF THE COMMON CARRIERS*

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Take a great city with its miles and miles of residential and industrial districts, place it on wheels and run it over steel roads to far distant points at a 45 mile an hour rate of speed, providing meantime for the health and comfort of its 100,000 inhabitants and you have a glimpse of the daily problem of the common carrier, this term being legally descriptive of the great railway systems of these United States.

This work must be performed without fail every twenty-four hours in varying climates and temperatures, serving all classes of travelers with their varying needs and delivering them to their destinations in health, comfort and safety.

In the accomplishment of this task sanitation necessarily performs its part, a fact which is becoming realized more each year, this being shown by the attention given it by railway organizations and the placement of sanitation under a special department. Cleanliness, the cornerstone of sanitation, must be maintained; the needs of the people as regards hunger and thirst, physical comfort and the satisfaction of the renal and intestinal emunctories must be properly subserved; the fatigue of the day must be relieved by proper and cleanly resting places where weary bodies and tired minds may prepare for the coming day's problems in restful sleep, and all this must be carried on under healthful temperature conditions, correct ventilation and an abundance of light, both natural and artificial.

The common carrier must transport the healthy and vigorous and, under restrictions, the weak and ailing; must deliver them to their destinations with health and vigor unimpaired or, in case of sickness, with due care and gentleness, providing for their many and varying needs enroute.

To do this an army of trained employees must be maintained, which must have its own offices and shops all properly heated, lighted and ventilated, in which to carry on the vast labor needed to direct and maintain the equipment used in this great work. In addition, stations or depots must be provided at each and every point at which a train receives and lets off passengers; these in their turn must be built, equipped and maintained so as to provide fit and proper waiting accommodations for patrons of the railway.

This, briefly, is the sanitary problem of the common carrier, thus outlined in order to consider the methods of handling and to more fully understand their importance and the need of skillful supervision; it is one of the departments of preventive medicine, that lusty and growing

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infant of medical science which at present is engrossing the thought and attention of both profession and laity. It is the problem of prolonging life and freeing it from the pitfalls and dark days caused by preventable disease. A remarkable and complimentary commentary of these present times is the fact that civilization has consented to listen to the voice of medical science admonishing the people "this could have been prevented" and actually striving toward such prevention, the results being shown in smallpox, diphtheria, typhoid, yellow fever and other diseases, all this evidencing a keen and growing desire for knowledge and a cooperative spirit which will result in even greater advancements.

Today our beautiful and productive Southern States are fighting malaria with constantly growing interest and success, in which work the Illinois Central Railroad is cooperating, and with every indication of ultimate obliteration of this persistent and insidious disease. Just as the great mass of humanity are today striving and cooperating towards betterment in health, so the railways are doing and feel that the public is aiding and abetting their efforts by a compliance with health regulations, an expressed appreciation of equipment and facilities and an evidenced cooperative spirit shown by appreciative treatment and patronage of the means of travel provided.

In 1911 the first great railroad system began to sanitate methodically and under the direction of a special department, employing a full time doctor-engineer to travel and inspect, recommending corrections to the officials of the road from whom orders emanated for the betterment of existing conditions. These corrections were along the line of public health progress and in accordance with the laws of the states traversed by the railroad. Presently these states, either individually or under the direction of the United States Public Health Service began to take a greater interest in the health and sanitary direction of their people and laws were promulgated to that end. The railways, passing through many of these states, each of them having individual laws not always in accordance with each other, began to encounter difficulty in complying with such opposing regulations and progress was more or less hampered. As a result a committee of experts drafted the Railway Sanitary Code, which conformed with the various state Laws and in 1920 was approved by the Surgeon-General, adopted by some thirty-five states and by the American Railway Association as recommendatory practice. As a result progress was resumed and harmonious conditions prevailed.

This Code is known as the Standard Railway Sanitary Code and deals definitely with the sanitation of offices, shops and camps, cleaning and disinfection of coaches and stations, water and ice supplies and transportation of persons having communicable disease. Its relation to the subject in hand will be referred to during the progress of this paper.

Now let us think for a moment of the unit of the passenger train, the modern steel coach, seating eighty-eight people and costing about $15,000; this coach makes approximately 1,000 miles a day and carries from one to three hundred passengers on its entire trip during which time it must be kept cleaned, warmed or cooled, lighted and ventilated; when it reaches its destination it is seized upon by an eager switch engine and with its companion coaches hurried to the coach cleaning yard where it is invaded by an army of cleaners, swept by an eighty-pound pressure blower, its cushions cleaned and vacuumized, its entire interior disinfected and deodorized, the wood work cleaned and renovated and its windows washed. While this is going on inside another army is at work on the outside, the entire surface being gone over and made to look almost like new. Then come the electricians, water and ice men, repairmen and finally the equipment inspectors, the finished result being that within a few hours it is once more ready to receive its load of human freight and bear it in comfort and safety to its destination. Divisions three and four of the Standard Railway Sanitary Code deal with these matters and tend towards that economic mecca, standardization. The process described puts the coach back into service but does not take into consideration the approximate upkeep in transit, which is provided for by train porters and a partial cleaning done at prearranged points along the line of travel where the train schedule permits of needed time.

The stations must be cared for in accordance with their needs, some demanding a special corps of cleaners numbering forty or fifty and some only two or three, others being cared for by

traveling cleaners who attend to twenty or thirty stations every month, doing this by assigned districts. All these employees must be furnished with the necessary materials and paraphernalia and each station must be kept up to the santitary standard demanded. There are presented also special problems in getting rid of pests with which the coaches may become infested, these ranging from the animal to the human variety and including rats, flies and mosquitoes. Each station must have its toilet conveniences, which range through a wide variety of equipment but all susceptible to contamination and in need of cleaning and disinfecting from two to six times every day. This latter forms one of the most vexing necessities which the railroad has to provide by reason of mistreatment and ignorance of equipment, the usual small town looking upon these places as civic conveniences and using and misusing them accordingly.

Not the least important is the santitary upkeep of the offices and shops which house the brains and brawn of the busy employee, who, in order to give the best effort to the railway, must be furnished with sanitary conveniences to the laudable end that the maximum health be maintained.

It is a simply performed act to rise from one's seat in a coach and walk to the drinking water tank at its end, there obtaining a refreshing drink of cooled water but if this assemblage but knew the work, legislation, inspection and supervision it had taken to get that cooled water there, to have it germ free and in a properly constructed tank which separated the ice from the water, it would be much surprise.

Lists of watering places are submitted by the railroads twice a year; the sources of this water are then surveyed by the State engineers and samples are analyzed in the laboratory, the results being transmitted to the Surgeon General of the U. S. Public Health Service and certificates issued permitting the use of the water if up to standard. Should the water be substandard signs reading "Unfit to drink" are posted and we must look elsewhere for certified water. But few travelers know that when they drink water from a railway coach drinking tank, it is and must be government certified. The law has for some years past required individual drinking cups and all regulations emphasize their use.

Do all these precautions pay? Yes, and a thousand times yes for typhoid has dropped from 80 deaths per 100,000 to 1.2 and where, a few years back, typhoid was a yearly visitor, its advent is now featured in the daily papers and some city receives a black mark in the shape of undesirable publicity.

There is no problem handled more expeditiously or carefully by the railroads than that of drinking water and the present tendency is all towards greater care and more careful supervision.

The food question with the railroads is one of the greatest delicacy and necessity for the traveler must have his appetite appeased at the regular and habitual hours. To do this great commissaries must be maintained, dining cars equipped and run in all long distance trains, and restaurants provided along the line of travel, and when the statement is made that this service is the cause of thousands of dollars yearly loss to the common carrier it is received by the public with an incredulous stare. Yet it is true, for the cost of running a first-class dining service which passes sanitary inspection and satisfies its patrons is tremendous and it must be maintained whether three are served or three hundred. The next time you and your wife are the only occupants of a dining car at meal time, just remember that it is only one of a large number of such discouraging trips. The steward in charge of the car is a veritable maitre-de-hotel and skilled in his line; from the chef and his three assistants down to the humblest waiter they are all high priced and experienced food handlers and subjected to periodic medical examination several times a year—this in accord with Sec. 72 of the Code. A special laundry service must be maintained to provide an abundance of clean linen for the tables as well as suits for the crew. The kitchen is a marvel of compactness and cleanliness and subjected to the most rigorous inspection. From the time of the purchase of the food to the moment of serving, it receives the most careful attention and every railroad takes pride in its dining car service.

Many restaurants are also maintained by this department, usually being located in the larger

depots along the line. These have also a lunch service to cater to that unfortunate American habit of rapid eating. Some restaurants are maintained by outside companies but the old time railroad eating house with its "twenty minutes for dinner" call has become largely a thing of the past.

When it comes to communicable disease rulings the way of the transgressor is indeed hard for the reading is so explicit that no one can be held ignorant and the Railroad Sanitary Code opens with significant statements regarding persons "knowing or suspecting" themselves to have certain communicable diseases and forbidding them to travel. It further forbids them to accept transportation, such as might be secured by a scheming friend or sold them unknowingly by an agent of the railroad. All this is as it should be but witness the duplicity of an Alabama negress with smallpox, desirous of visiting her kin folks in Chicago; she, being in full splendor of the eruptive stage of the disease and knowing full well that she would not be allowed to travel, carefully muffled her face in a shawl and rode all the way to the big city undiscovered and then would have escaped in triumph, had not the playful wind from which Chicago sometimes takes its name, blown the shawl away from her face and she was apprehended and sent to the hospital for contagious diseases.

It is a significant fact that of the five communicable diseases enumerated in Section one of the Code four have largely disappeared in this country and the fifth, smallpox, is on the wane.

The railways are forbidden by Section 8 of the Code to transport leprosy cases unless a permit to travel has been issued by the Surgeon General and the State Boards of Health in which the case resides and to which it wishes to go and then only under the specified conditions of isolation and other restrictions devised to prevent the spread of the disease. It is to be regretted that the old law has been abolished requiring lepers to cry out "unclean, unclean." Would that it could be revived and extended to cover cases of social disease.

Whereas the railways are forbidden to transport five of the communicable diseases a dozen others, as diphtheria, measles, scarlet fever, etc. are allowed transportation under isolation in a separate compartment and the attendance of a nurse, who shall restrict communication with the patient, disinfect all dishes and utensils used, burn sputum and nasal discharges after receiving same in suitable container and, in case of typhoid, attend to disinfection of the discharges from the renal and intestinal emunctories.

The Code further permits the railway to carry isolated communicable disease patients under declaration of an emergency, in which it is deemed necessary for the purpose of saving life.

All coaches occupied by communicable disease patients are treated as infected premises and rigorously disinfected before again being used.

In conclusion attention is called to the fact that the railways are taking a keen interest in Sanitation, which is fostered by the interest of the employees and directed by the Medical and Surgical Section of the American Railway Association and by committees formed from that association and the American Railway Engineering Association. A strong cooperative interest exists between Governmental, State and Railway sanitarians and it is this interest which makes for the progress being achieved at the present time.

DISCUSSION

Dr. A. L. Mann, Elgin: The paper was very good, but the unfortunate part about it, if it only appear in the State medical literature the laity will miss it. I don't know how you are to get it into publication unless some action is taken whereby it can be republished.

Dr. Frank Wieland, Chicago: I would like to ask the doctor how often the drinking water tanks are washed out and sterilized. The reason I ask, I recently had a drawing room from Chicago to New York, on another road, and I thought the water was not pure. I did not know whether the ice came in contact with the water or not.

Dr. H. W. Smith, Roodhouse: Dr. Beach made a statement in regard to decreasing cases of typhoid fever. I practice medicine in a town of 3,000 and naturally a great deal of my practice was in the country. Twenty-five years ago I had 15 to 40 cases every fall, but I haven't treated a case of typhoid fever now since a year ago last November.

I can't see that the sanitary conditions are very much improved so far as the outside wells and toilets are concerned in the country. They haven't made such improvement in the water supply, but what has brought about this wonderful change in typhoid fever, they have screened out the flies. If you took dinner in the country 25 or 30 years ago there was a fellow standing there with a peach tree limb brushing the flies from the table.

I find yet in the country, well-to-do farmers, versed

in taking care of valuable stock, who are careless of their own drinking supply water.

Myself and fellow practitioners in this community have endeavored to correct this condition and have made some improvement, but much is to be done yet.

Dr. J. J. McShane, State Department of Health, Springfield: The reason I rise to discuss this paper is that Dr. Mann made the suggestion that Dr. Beach's paper be printed so the laity may have access to the same.

We do not permit persons with certain communicable diseases at the present time to travel, except by authority of the Illinois Department of Public Health and on permission of the local health authorities of the jurisdiction from which and to which removal is desired. All authorized removals shall be effected by private conveyance and under the personal direction of a physician or medical health officer who shall exercise extreme care to prevent the spread of the disease, including disinfection of conveyance.

The Standard Railway Code permits persons with certain communicable diseases to travel by train, providing they comply with the rules of the Railway Code and rules of the State Department of Health relative to interstate travel.

Dr. Beach (closing discussion on his paper): The question has been asked as to how often water coolers are cleaned. I will say that Section 14 of the Standard Railway Sanitary Code directs that such tanks be cleaned every week and drained, cleaned and disinfected once each month. Streaming steam was used considerably but has of late been largely discontinued owing to the criticism that it was doubtful as to whether the steam in contact with the cold galvanized iron or block tin tanks exerted any great disinfecting effect. We are depending more upon thorough mechanical scrubbing and flushing with boiling water.

I wish to say that copies of the Standard Railway Sanitary Code can be readily obtained by any of you who are interested in its contents.

The preventive medical man of today must be a patient, persistent, hard-working chap who will not become discouraged by repeated rebuffs. Remember that you have the technical knowledge and must impart it to the man whom you wish to convert in the language which he will understand. This takes patience, reiteration and smiling persistence. Do not make any statements which you cannot prove and make each such statement at least three times, using different language every time—one of these ought to "take."

I trust that no one will leave this convocation with the idea that the railroads are not doing their bit on sanitation, the great trouble is to get them all to "do their bit." I have the good fortune to be connected with a road which is keenly alive to the necessity and benefits of sanitary supervision, the Illinois Central having maintained a Sanitary Department since 1911, the Chief Surgeon being zealous in the line of preventive medicine. Some other roads do the same thing and it is to be hoped that in the near future all the railroads will be active in the performance of sanitary work.

FURTHER EXPERIENCES WITH DILUTE ALCOHOL NERVE BLOCKING ANESTHESIA IN TONSILLECTOMY*

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CHICAGO

At the meeting of the American Laryngological, Rhinological and Otological Society at Atlantic City, May 10, 1923, I read a paper entitled "Alcohol Injections as a Possible Adjunct to Tonsillectomy under Local Anesthesia." We take the liberty of quoting sections of this paper and of giving the results of the further use of the method therein outlined.

The writer has always favored the use of a local anesthetic in tonsillectomies wherever it could possibly be used. Its advantage over general anesthesia seems to lie in several facts. First, there is either no nausea or if any, much less than with general anesthesia. Secondly, there is the avoidance of aspiration pneumonia. Third, the time of operation is usually considerably shortened as compared with a general anesthetic, particularly in adults. Fourth, there is usually less immediate discomfort in that the patient can take ice, fluids, etc, etc., shortly after the operation whereas with ether it is necessary to deprive the patient of these things for a considerable length of time. Fifth, there is the avoidance of the ill effect that ether or chloroform may have upon the general system, such as cardiac depression, nephritis or the induction of a coma in diabetes. Sixth, the swallowing of blood and the consequent vomiting are usually eliminated in that the patient is able under local anesthesia to expectorate the blood that accumulates in the throat.

We have employed local anesthesia in tonsillectomies for many years in practically all cases above the ages of fourteen or fifteen unless the individual was too apprehensive of the operation or the pharyngeal reflex uncontrollably active. No hypodermic was given before the operation unless the individual needed a sedative very much. We have often noted that when morphin was used, the patient was nauseated thereby and was likely to vomit while being anesthetized or during the operation.

During the past year, we have entirely omitted the use of any morphin or other sedative before the operation. Usually the patient is allowed to have a cup of strong hot coffee but no other preparation is made.

History of Technique: In 1909 Yankauer described a most excellent method of producing local anesthesia for tonsillectomy by blocking the posterior palatine nerves at their emergence from the posterior palatine foramina. He states:

The tonsils are supplied by the circumtonsillar plexus

*Read at the annual meeting of the Illinois State Medical Society, at Springfield, May 7, 1924.

derived below from the tonsillar branches of the glossopharyngeal, and above from the middle and posterior palatine nerves. The glossopharyngeal is the smallest of the cranial nerves and its tonsillar branches are small; it is, moreover, a nerve of special sense rather than a nerve of general sensation, and its tonsillar branches may for practical purposes be neglected. The middle and posterior palatine nerves are derived from Meckel's ganglion of the fifth nerve, which is the principal nerve of sensation for the entire head. These nerves leave the sphenopalatine fossa through the accessory posterior palatine foramina, two small openings in the posterior part of the hard palate at the junction of the alveolar process with the horizontal part of the bone. These two nerves supply not only the tonsil but the lateral pharyngeal wall. The two openings are very close together, but their location is not marked by any special landmark on the surface of the mucosa of the mouth so that the point for injection must be determined by arbitrary measures. There are two methods: first, if the last upper molar tooth is present, begin at the posterior end of the margin of the gum of the last molar tooth and measure upward one centimeter—that is, at right angles to the free border of the teeth, and then one centimeter backward. Second, if the last molar tooth is absent, we first determine the location of the tip of the hamular process by placing the finger upon the soft palate; the process can be distinctly felt as a sharp point of bone.

The writer tried this method a few times and then for one reason or another discontinued it until papers by John A. Thompson appeared in 1917 and 1920. He states that the "anterior surface of the tonsils is supplied with sensation by the posterior palatine nerve, a branch of the spheno-palatine ganglion. It emerges with a small artery from a separate opening immediately behind the posterior palatine foramen. The glossopharyngeal nerve also sends branches to the tonsils." Prof. Knower of the University of Cincinnati collaborated with Thompson and made sections of the neck at the level of the lower third of the tonsil showing the relation of the glassopharyngeal vessels and the tonsils.

The important structures which run through this region are surrounded by a loose connective tissue which is continuous from the pharyngeal wall outward and back in front of the deep prevertebral fascia, to surround the carotids, hypoglossus, superior sympathetic ganglion and plexus, vagus and glossopharyngeal nerves. In blocking nerves, it is not necessary to inject the nerve itself, since surface contact is all that is needed. The connective tissue noted by Knower permits us to surround the glossopharyngeal nerve with anesthetic solutions without any danger of injuring the other important structures mentioned. The injection can be made between the tonsils and the anterior pillar, penetrating the constrictor muscles and pharyngeal fascia. A better route is external to the anterior pillar at the junction of the upper and middle third of the tonsil. At this point there is only mucous membrane to pierce and there is no danger of passing the needle through a deep tonsillar crypt as in the first method and of carrying infection into other tissues with serious results. At this level, the nerve trunk is three-quarters of an inch from the surface.

This plan we adopted with most excellent results and it has usually given us perfect anesthesia and as little bleeding as any other method we have ever attempted. We believe that the operative technique and bleeding are relative matters. Whether a sharp instrument, a dull ring or any other appliance is used, some cases bleed greatly, and others very little. This seems to depend upon several factors, such as the anatomic peculiarities of the parts, like the presence of rather large veins in unusual places, etc., the direction in which vessels are severed, the clotting time of the individual, the depth in the tissues to which an incision is carried, etc.

Because of its toxicity, the writer has never used cocain, even in weakest concentration, for submucous injections in the nose or throat. In nasal operations we have applied it topically in the form of flakes or ten per cent. solution together with adrenalin chloride. In tonsillectomies it was formerly used by us in very apprehensive patients or those with very marked pharyngeal reflex by simply applying a small amount on a swab to the mucosa of the pillars, the palate and the posterior pharyngeal wall, before injecting the apothesine or novocain, etc. During the past year, we have entirely discarded the use of cocaine for any application whatsoever in the throat preliminary to or during operation. In April, 1923, Dr. Ellison L. Ross read a paper before the Chicago Laryngological and Otological Society in which he showed that cocain, even when applied locally, sensitizes the individual to adrenalin so that the blood pressure rises greatly when the latter is injected. This synergistic action produces an increase which is much greater than the combined increase of blood pressure produced by cocain or adrenalin used separately. In view of this, caution should be observed in our anaesthesia routine. Dr. Ross stated that if adrenalin be first used, and then a pause of five or ten minutes made until the blood pressure effect has disappeared, the application of cocaine will not result in the greatly increased

blood pressure noted where cocaine is first applied.

Considering the good results reported by neurologists and surgeons in producing at least temporary relief from pain in cases of neuralgia by injecting with alcohol the nerves or their immediate vicinity, it was deemed worthy of a trial in tonsillectomy. This procedure was contemplated, not so much for procuring perfect anesthesia during the operation, since we already had that by means of nerve blocking with apothesin and novocain, the technique of which we have described, but it was directed towards reducing or rather mitigating the very painful condition usually present for a number of days after the operation. There being no reference in the literature to guide us, the research department of Parke, Davis & Co. assured us that no chemical antagonism existed either between apothesin or adrenalin or alcohol. Soon after the outbreak of the war, we began using apothesine which was then first introduced by that firm; and we have used it in many hundreds of cases with very satisfactory results, that is with regard to the good anesthesia produced and the absence of untoward symptoms except a slight cyanosis on rare occasions noted shortly after the injection.

With reference to the effect of alcohol on the tissues, Otto May, after quoting Schlosser, Finkelnberg and others concludes that

1. Alcohol injected near the trunk of a peripheral nerve produces more or less complete necrosis at the point of injection.
2. This change is not ascending; the nerve above the place of injection remaining normal. The cells of origin (ganglion) may show some chromatolysis but no actual permanent injury.
3. The conditions produced by the injections are more favorable to regeneration than nerve sections without suture. The anatomic continuity of the nerve trunks favors rapid regeneration although this may be somewhat retarded by the fibrosis which occurs to a greater or less extent in all alcohol injections.

If alcohol was placed merely around the nerve, its effect, although marked, was transitory: the nerve quickly recovered its function (Quoted by G. Sluder). Probably the effect on the other tissues is also a local necrosis followed by a fibrosis. As to the systemic effect of alcohol, most pharmacologists agree that even in small doses the action on the central nervous system is quite pronounced. It gives rise to a feeling of well being as the individual becomes more self confident and less shy. Large amounts blunt the sensations. With reference to its action on the circulatory system, small doses of alcohol slightly accelerate the pulse and stimulate the heart. The vessels are not much affected although there is peripheral vasodilatation. The blood pressure usually rises somewhat.

Technique: Various concentrations of alcohol were used by us, from 25 to 95 per cent. but it was found ultimately that from 25 to 33 per cent. apparently served best in giving the good effect without any marked reaction. During the past year we have used a technique which varies slightly from that mentioned in the original report. The patient is given nothing whatsoever except, as previously mentioned, a cup of strong hot coffee. No morphin or other sedative is administered, and no cocain whatsoever is applied to the throat. For injection purposes a metal or a glass syringe of from two to four centimeters capacity with a straight needle of about 21 gauge is used. To 15 c.c. of a one-half per cent. novocain or apothesin solution, (whichever happens to be at hand) are added six drops of a one to one thousand adrenalin chloride solution. Then enough 95 per cent. alcohol is added to give a concentration of from 25 to 33 per cent. Lately we have omitted the adrenalin.

N.B. We found, however, in a few cases that the injection of the posterior palatine nerve involved also the motor supply of the soft palate and there was then three or four weeks of considerable paresis of the palate which was very uncomfortable and disconcerting to the patient. For that resason, we have modified the technique by injecting only the anesthetic solution as described above, about one-half to one c.c. in the region of each posterior palatine nerve internal to the last upper molar tooth. Then the alcohol is added to the remainder of the anesthetic solution and from four to six c.c. injected external to each tonsil into the areolar tissue at the level of the junction of the upper and middle third of the tonsils; a smaller amount, about one-half to one c.c. on the level with the lower third of the tonsils, but entirely external to it. A pause of 4 to 5 minutes is then made. Dissection with knife and snare was done in practically all of these operations which now number about 175 private cases and a very considerable number of ward cases.

Results Obtained. The anesthesia obtained by

the method outlined was very good. As previously stated, excellent results had already been obtained by the use of apothesine and novocain alone. However, our main purpose was to endeavor not only to have a good anesthesia during the operation but to have less post-operative pain the first two or three days. The advantages which we see from the addition of alcohol to the anesthetic solution are several. First, there was practically no toxic effort produced from the anesthetic. This may possibly be due to the fact that less anesthetic solution was used than otherwise would have been the case; one-quarter to one-third of the fluid injected consisting of alcohol. There was practically no syncope noted. The class of patients which the writer has to operate on included many very excitable and apprehensive individuals who ordinarily cause a surgeon much trouble in that they become very "nervous" or often "faint" or threaten to do so during the course of the operation itself. Since using the alcohol, however, we have no trouble from this source. Apparently there has seemed to be considerably less post-operative bleeding; hemorrhage is, however, a relative matter and does not seem to depend upon the method of operation but upon other factors previously mentioned. Fourth. During the first 24 to 72 hours, most of the patients seemed to have less discomfort than is usually observed. There were a few who complained very bitterly and others who had practically no pain at all. Reaction to pain is of course a relative matter depending upon the temperament of the individual.

In order to have a more nearly objective illustration of the effect of the alcohol injections, we took a series of consecutive and unselected cases, 25 in number, in whom the anesthetic solution only was injected into the right posterior palatine and the region of the right glossopharyngeal nerve, while alcohol was added to the solution injected into the 9th nerve on the left side. The patients did not know that there was any difference in the solution which was used on the two sides. These individuals were then asked one to several days after the operation whether there was any difference in discomfort between the two sides of the throat. Of the 25 patients, one stated that he had more pain on the side on which alcohol had been injected, one had very little pain on either side, one was very indefinite in her observation and the other 22 stated that they had much less pain and discomfort on the side on which the alcohol had been used; in fact, a few said they had had absolutely no distress on the alcoholized side.

Therefore we feel that the addition of the alcohol to the anesthetic fluid presents a number of advantages, but we wish also to state the unpleasant features or disadvantages which we noted. In the first place, there was more pain at the time the injection was made when the alcohol was present in the anesthetic fluid than when it was not, but this pain lasts only for a very short time. After both sides have been injected it is our policy to wait from four to five minutes before beginning the operation and during this period the pain entirely disappears. Again there is the possibility of impaired mobility of the soft palate if any of the alcoholic solution is used in the region of the posterior palatine nerve. For this reason we have adopted the technique as above outlined of omitting the alcohol from the anesthetic solution as far as the posterior palatine nerves are concerned, injecting only into the region of the glossopharyngeal plexus with alcohol. In those cases, however, where there was a paresis of the soft palate following the use of alcohol in our earlier cases, the impaired mobility disappeared after three of four weeks. Let me state, however, and I believe that this will be corroborated by other operators who use only novocain or apothesine in nerve blocking that occasionally impaired motility of the soft palate has occurred for a short time, so that the alcohol alone cannot always be held responsible for it, although it is best omitted.

Conclusions: Local anesthesia in tonsillectomy seems to us preferable to general anesthesia in that it causes less nausea, less vomiting and less post operative discomfort. The operation is usually shorter than with a general anesthetic, and there is practically no danger of aspiration pneumonia. Furthermore, the systemic effects of ether, chloroform, etc., such as nephritis, cardiac depression and the induction of coma in diabetes are avoided.

The addition of alcohol to the anesthetic fluid seems to offer great advantages in that there is less toxicity, less syncope and less postoperative discomfort and bleeding, which we believe far outweigh the transitory unpleasant symptoms, such as the sharp pain at the time of injection, or the possibility of temporary interference with

the mobility of the soft palate. Where the alcohol is omitted from that portion of the solution injected in the region of the posterior palatine nerve and added only to that which is used in the region of the glossopharyngeal plexus, all the beneficial effects are obtained without any interference with the soft palate.

Since the reading of the original paper, our experience with this method has been considerably broadened and we feel that with the slight modification which we have introduced, our results have been most satisfactory indeed.

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DISCUSSION

DR. HARRY KAHN, Chicago Dr. Sonnenschein's paper covered the subject so well that there is hardly any room for discussion. I have seen him do twenty-five or thirty, I think, I don't know how many of these cases, and I have done a few myself and I have watched these cases rather carefully.

His method seems to take in the ideal local anesthetic. That is, that it should be non-toxic. It should give no reaction *per se from* the injection. It should have no aftereffects. And that it should cause a good analgesia of the parts affected.

Now these things have occurred, and, furthermore, I think in this method we have, in addition, a secondary analgesia in the tonsillar fossa, with less symptoms afterwards.

In the method I have been using up to this time, it has been the injection of 2 per cent. of apothesin, to which 10 drops of adrenalin has been added to 4 drams of 15 c.c., and I have injected the pillars; on the second day or the day after the operation, I have always had a very profound pain. I think that has been the experience of most men in local anesthesia.

With Dr. Sonnenschein's method, we find this does not occur, but there seems to be a straight healing and a more comfortable feeling and not so much discomfort.

So that I think the method, as I have seen it used, and I have used it a few times, is the ideal thing to have in tonsillectomy. This is like the writing of books. There is no end. There is always something new. Somebody always has something else. Probably next year somebody will have another method. But this year I think this will be the fashion, and especially since we have the alcohol, I think with Dr. Sonnenschein's great number of cases, it is the little dose of "booze" that he gave them, and, if the prohibition agent doesn't get him, I think he will get along and have a tremendous tonsil practice. I am opening a competition shop, and I hope to steal the drippings from Sonnenschein's anesthesia methods.

IMPORTANCE OF EARLY TREATMENT OF EPITHELIOMA ABOUT THE ORBIT*

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AND

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Any one having the opportunity of observing a large number of cases of cancer of the skin, such as occur in a clinic like that of the Barnard Free Skin and Cancer Hospital, will be struck with the relative frequency and insidiousness of cancer of the orbit. This paper is therefore written to call attention to this fact.

A large majority of the epitheliomata of this region are of the basal cell variety, that is, they are composed of cells having the appearance of those which occur in the basal layer of the rete Malpighii and may be due to cell rests from infolding during embryonic life as Bowman has so beautifully demonstrated. This type of cancer does not metastasize like those composed of cells of the prickle cell variety.

We cannot give statistical data in relation to the microscopical findings in the cases included in this report, as it is not our custom, in the Barnard Free Skin and Cancer Hospital, to excise a section for microscopical diagnosis in such cases. Such a procedure is considered, by the best authorities, to be dangerous, for fear of opening a vessel to the cancer process or the stimulation of its growth. All operations for cancer, unless very thoroughly performed, cutting wide of the cancerous area, or unless a cautery knife be used, may open up lymphatic and blood channels for local metastasis. Any operative procedure whether it be done with the knife, cautery, or with the knife-cautery, acid, radio therapy, or no matter what the agent used, unless it thoroughly eradicates all the cancerous tissue will

*From the Dermatological Department of the Barnard Free Skin & Cancer Hospital.

prove an irritant and stimulant to those cells remaining. Therefore, statistics as to the microscopical nature of cancer of the skin is very interesting to obtain but dangerous to the patient.

Fig. 1.

A, B, C—Basal celled cancer in various stages of development. Cases 1, 2 and 3.

However, an experienced eye can generally detect basal-celled cancer and differentiate them from the more virulent prickle or squamous cell variety.

In no portion of the face is the basal cell cancer more dangerous than about the orbit.

Rapid local extension is the rule after growth has begun to crust or ulcerate, and when this occurs extension to the orbital cavity usually follows rapidly. This unfortunate event most frequently occurs about the inner and outer canthi. In our clinical experience we have often noticed how rapidly these growths extend to either canthus even though situated two or three centimeters away, probably due to the anatomical situation of the lesions in regard to the lymph drain in this region. The cells of the tumors so situated reach the lymphatic drain and are propelled by the inward flow of lymph toward the canthi, where they rapidly increase in size through proliferation of their cells and land in and near the canthi with a greatly accelerated and increased stimulus of growth.

Ulceration and extension, in this region more than any other, are increased or stimulated by the application of irritants such as those recommended by friends and relatives of the patient or by ignorant physicians or quack doctors. It is extremely rare, in dispensary and even in private practise, to observe the very early or initial appearance of these growths about the orbit. When these patients appear for consultation, the disease is usually advanced, generally due to the irritating effects of various remedies that have been recommended to the patient as above mentioned. In this region, as in all others affected with cancer, the fundamental law holds, that inadequate

Fig. 2.

A, B, C—Basal celled cancer (Rodent Nodule) about the eye. Cases 4, 6 and 8.

salves and pastes, inadequate cauterization, inadequate surgical procedures, or inadequate x-ray or radium therapy, merely increases the growth and malignancy of the cancer cells.

No treatment is indicated in cancer unless it be of sufficient intensity or thoroughness to des-

troy all of the cells composing the growth, which is obviously far less destructive and deforming when the growth is first seen by the patient than

Fig. 3.
A—Advanced basal celled cancer of lid and orbit.
B—Enucleation of eye and apparent cure by radium. Case 5.

after it has been irritated and extended by inadequate or quackish therapy.

When basal cell cancer once reaches the region in or about either of the canthi or conjunctiva, the inner or outer wall of the orbital cavity, whichever it may be, is always invaded. When this occurs the ultimate cure of the condition is very seldom accomplished without the complete

Fig. 4.
A—Basal-celled cancer of upper lid.
B—Cured by radium. Case 7.

enucleation of the eye, owing to the fact that marginal proliferation of the process extends more rapidly in the tissue of the regions of the canthi than it does upon the skin, due, no doubt, to the succulent open lymph drains of the part.

Frequently the degree of involvement along the wall of the orbit cannot be discerned from the clinical appearance about the external surface of the skin or in the region of the canthi. The examining finger can, however, frequently detect marked infiltration and induration upon the wall of the orbit by deep palpation of the region affected, when such involvement has occur-

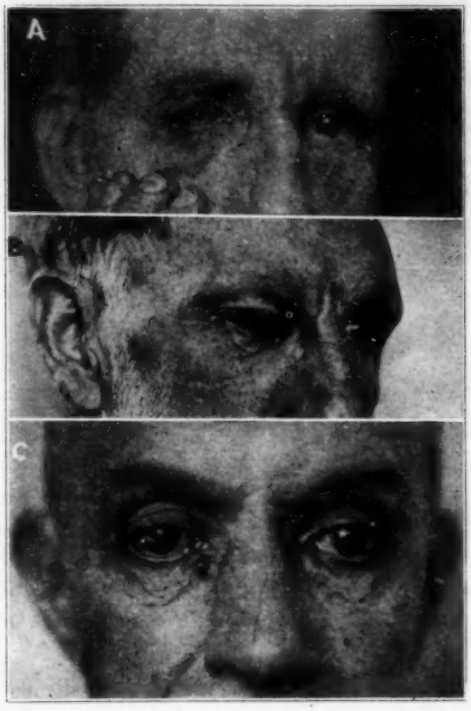

Fig. 5.
A, B, C—Types of basal-celled cancer of lids. Cases 9, 11 and 13.

red, in which instance enucleation of the eye becomes an unfortunate necessity.

In the treatment of those cases where the cancerous process had burrowed and hidden itself along the outer or inner wall of the orbit, we have repeatedly tried to reach it and destroy it by burying tubes of radium in this region without, however, very encouraging results. In an attempt to save the eye in some of these cases, the actual cautery has been used, in several instances, to bore holes deep into the tissues about this region to act as a bed for the reception of a 25 milligram

tube of radium, allowing the radium to rest in this bed a sufficient number of milligram hours to destroy the growth. This procedure, however,

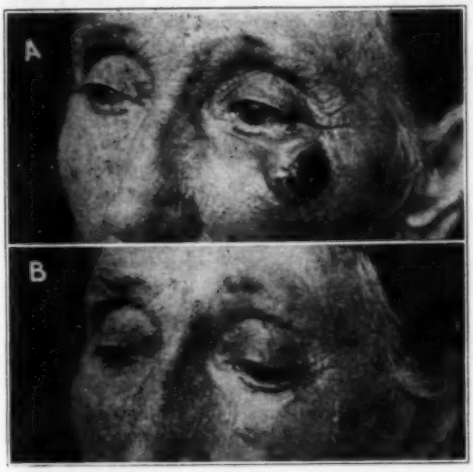

Fig. 6.
A—Large rodent nodule near left eye.
B—After radium treatment. Case 10.

has only in a relatively few instances produced encouraging results, and, it has in most cases, where such involvement has occurred, been ultimately necessary to clean out the orbital cavity.

Fig. 7.
A—Dangerous basal-celled cancer of lower lid.
B—Apparent cure by radium. Case 12.

For comparative statistical study we have gone over the records, of the Barnard Free Skin and Cancer Hospital for the last fifteen years to study the relative frequency of cancer about the orbit, with the following statistical results: Out of a total number of 3,172 cancer cases entering the hospital from 1905 to January 1921, 980 or 34.69% of them were of the face; of the 980 cancers of the face 10% occurred about the eye, that is, upon the upper or lower lids, or about the inner or outer canthus, or near the eye upon the temple. It is curious to note that out of 67 cases of cancer of the temple 16 or 23.8% finally invaded the orbit. It is also of interest to note that of the 95 occurring about the eye their location was as follows:

Right upper lid	7 or 7.3%
Left upper lid	7 or 7.3%
Left lower lid	18 or 18.9%
Right lower lid	21 or 22.1%
Right inner canthus	12 or 12.6%
Left inner canthus	12 or 12.6%
Right outer canthus	8 or 8.4%
Left outer canthus	4 or 4.2%
Right orbit	3 or 3.1%
Left orbit	3 or 3.1%

Of the 980 cancers occurring about the orbit their relative frequency of location was as follows:

Forehead	38 or 3.8%
Temple	68 or 6.8%
Nose	268 or 26.9%
Cheek	117 or 11.9%
Lips	392 or 40 %
Eye-lids	95 or 9.6%
Multiple cancer of face	7 or .71%

The figures given differ somewhat from others in that the percentage of face cancer is considerably higher. Broder for instance, compiling statistics upon a similar subject at the Mayo Clinic, gives the following percentage in similar locations:

Temporal	4.1 %
Canthi	4.85%
Forehead	8.71%
Upper and lower lids	20.52%
Nose	19.02%
Upper lip	2.98%
Cheek	23.5%
Lower lip	1.11%
Chin	1.49%

In illustrating the point to be emphasized in this paper; namely, the danger of cancer about the orbit, we submit photographs and brief histories of a few illustrative cases from the records of the Barnard Free Skin and Cancer Hospital.

Case 1. (O. R.) Aged 46. Male.

Present condition began about two years ago as a small tumor under skin of left upper lid. Tumor mass

seemed to involve the whole of the upper lid until a few months ago when the general rapid extension began. Upon first consultation, the middle and inner parts of the upper and lower lid were ulcerated with

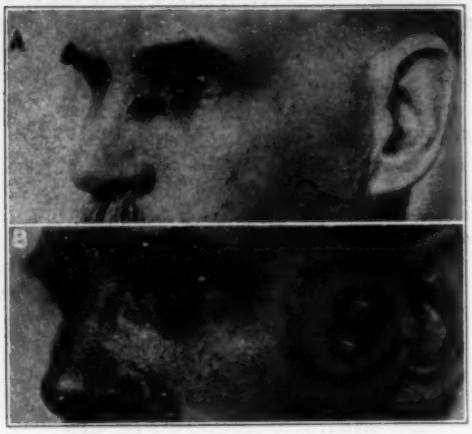

Fig. 8.
A—Basal-celled cancer near inner canthus.
B—Cure by radium. Case 14.

marked involvement of the eye and inner wall of the orbit. The eye was enucleated and showed a marked involvement of all of that region. (Surgery.) Impossible to remove all of the tumor.

Case 2. (J. B.) Aged 70. Male.

Began as a roughening of the right side of the nose. The crust formed came off several times. It began to spread lately and at the present it involves the region under the eyelid and the conjunctiva. This case finally dropped out of sight but there was undoubtedly involvement as in all cases of the conjunctiva and the inner canthus. Improved under radium treatment.

Case 3. (A. R.) Aged 39. Male.

This case is typical of the others, starting with an involvement of the lower lid, near the inner canthus, which soon formed an ulcer that extended rapidly outward. Paste was used upon it by some quack with rapid recurrence and involvement which eventually involved the eye and travelled inward from the inner and outer canthus, involving the conjunctiva of the eyeball and the lids into a solid cancerous mass, necessitating the removal of the eye.

Case 4. (E. G.) Aged 73. Female.

It is curious in this case that the patient gives the history of the mother having had a similar condition in the same location which was treated with plaster. The patient's trouble began as a small wart about eight or nine years ago, near the inner canthus of the left eye. When seen, the patient presented a small cherry sized tumor which had a peculiar raspberry appearance.

Case 5. (M. M.) Aged 61. Female.

Began on lower lid left side, 20 years ago. It seemed to disappear several times, and then reappear. This was treated in usual way, until the eye and lids of that side became involved; cornea was clouded and there was an exuding tumor mass jutting out from the lower segment of the eye region which necessitated the removal of the eye. Patient seemed to have clinical cure and was under observation for a year or more. Surgery only. Discharged, apparently cured.

Case 6. (W. P.) Aged 69. Female.

About two years ago, disease began as small pimple near outer canthus of left eye, which recently has begun to grow larger and ulcerate. The outer canthus of the eye and the outer wall of the orbit is involved with a portion of the conjunctiva of the eye ball. The ulcer itself shows a hard rolled border. The base is necrotic. This was treated with x-ray with an improvement of the outer portion of the growth. However, 14 months after treatment, the lesions seemed to be symptomatically cured.

Case 7. (E. W.) Aged 73. Male.

This man has an epithelioma that began upon the upper lid of the right eye near the inner canthus, and showed some involvement of the conjunctiva with infection of the eye ball. He was treated with radium and clinically cured.

Case 8. (J. G.) Aged 45. Male.

Has a fistulous track which digs down through outer canthus of right eye, with a cancerous infiltration, along this track starting from a small lesion of the outer canthus. Under anesthesia, the fistulous track was excised and the eye-ball was enucleated and the

Fig. 9.
A—Basal-celled cancer of lower lid.
B—After radium. Case 15.

orbit cleaned out and cauterized. Later, there was a recurrence.

Case 9. (W. E.) Aged 65. Male.

Began about six months ago as style-like lesion. Applied peroxide up to time of appearing at clinic. Began to ulcerate three months ago. When he appeared

for treatment, he presented an ulcer from six to eight m.m. in length which has eroded ½ m.m. deep, involving the margin of the lower lid and eye. Induration extends from outer canthus to within 6 m.m. of the inner canthus. It projects somewhat outward with

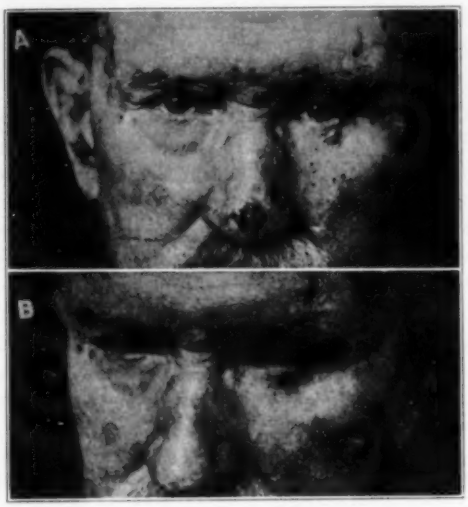

Fig. 10.
A—Typical rodent nodule near left eye. Another on nose.
B—After radium treatment. Case 16.

small involvement of the conjunctival surface. Growth was seemingly destroyed, except a small suspicious part, by radium last June.

Case 10. (E. D.) Aged 67. Female. Duration 40 years.

This patient shows carcinoma on cheek but it was treated early enough by operation to prevent its extension into the eye. Surgery and radium, cautery and x-ray.

Case 11. (D. F.) Aged 63. Male.

Fourteen years ago patient noticed small rough scab on right lower lid, near inner canthus, which could be picked off to recur. Various applications were applied on it that the laity use, especially farmers. Then he was given a paste by a neighbor. After application of paste, the lesion healed, but it recurred in two years. Then he was treated by a quack who guaranteed a cure, but again it recurred. He has had a varied medical career with quacks and neighbors until he appeared in our clinic, September, 1916. At that time, at the inner canthus of the eye, involving the lower lid, was a deep ulcer at least 1 cm. in length. It has involved the tear duct and inner canthus and most of the lower lid with some involvement of the conjunctiva. It has also spread inward on to the nose. Involvement of the canthus and the inner wall of the orbit necessitated enucleation of the eye. (Surgery.) Discharged apparently cured. Adequate early treatment would have saved the eye.

Case 12. (C. R.) Aged 50. Male.

Lesion began 7 years ago as a pimple on lower left lid near inner canthus. Lesion was burnt with acid 4 years ago but recurred. The tumor mass, at patient's appearance at clinic, involved the lower lid which is everted; conjunctiva is also involved. There is no evidence of involvement of the orbit. Patient was treated with radium and was reported apparently cured last visit in September. First application of radium was applied in November, 1919. (Radium.) Apparently cured.

Case 13. (O. K.) Aged 54. Male.

The lesion is situated 1 cm. distance from lower lid, elevated, with bleeding surface; is typical of basal-celled carcinoma with hard everted borders about 8 mm. in diameter. Apparently cured with cautery. It is to be noted that in this case the disease began some distance from the margin of the lid, really at the lowermost edge of the lid. Cautery-cured. No deformity.

Case 14. (C. M.) Aged 53. Male.

On the nose, about 8 mm. from the inner canthus of the left side is an epithelioma about 1 cm. in length, 7 mm. in width, which was far enough away from the eye and had not been irritated by former treatments. Healed under application of radium.

Case 15. (W. H.) Aged 55. Male.

There began just below the margin of the lid but on the outer surface, a nodule, about 11 years ago; was not irritated by various applications and therefore had

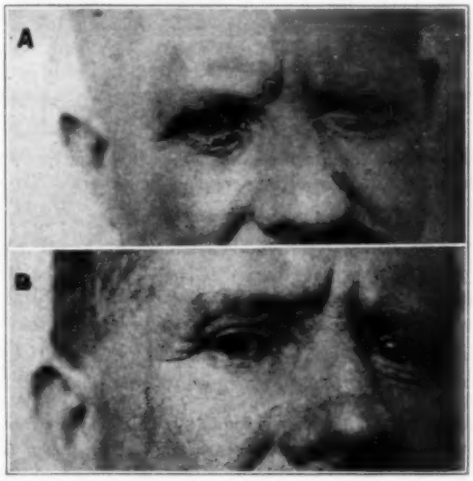

Fig. 11.
A—Basal-celled cancer on lower lid.
B—Cured by radium. Case 17.

not approached the dangerous marginal surface of the lid and was symptomatically cured by radium.

Case 16. (T. O.) Aged 65. Male.

The patient presented two basal-celled cancers: one on the end of the nose which began 10 years ago and

did not decrease very rapidly in size in spite of numerous applications. It is 14x12 mm. in size with a raised border. Under the left eye, far enough away from the margin of the lip to be passably safe, is a basal-celled nodule mm. in diameter, which has existed for 18 months. Both of these lesions were rapidly cured with radium.

Case 17. (J. M.) Aged 52. Male.

This ulcer on the lower lid was not markedly infiltrated but seemed to present some suspicious con-

Fig. 12.
A—Nodular type of basal-celled cancer of upper lid. B—Cured by radium. Case 18.

dition along the inner portion of the conjunctiva. All the lesions were clinically cured with radium.

Case 18. (J. H.) Aged 71. Male.

About 18 years ago, while working in a bottle factory, was struck on the eye-lid. The lesion healed, but six years afterward, he noticed a small lump which increased in size and has been in its present condition for 1½ years. It is situated on the left upper lid, occupying almost the whole surface and is a basal-celled type cancer. It is 2½ cm. by 1½ cm. in size, somewhat lobulated and nodular. This had not been irritated by various treatments and in the upper lid the lesions do not seem to have tendency to spread into the orbit as virulently as in the lower lid. This case was readily cured by radium.

The purport of this communication is to illustrate the clinical appearances of these growths about the orbit, their early characteristics, their danger and the importance of proper and adequate treatment in their early growth and the extreme danger of ignorant and inadequate treatment.

Wall Bldg.

THE SURGICAL TREATMENT OF ANGINA PECTORIS*

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WINNETKA, ILL.

Rather than advocate the surgical treatment of angina pectoris, it is my purpose in this paper to lay before you what has been done in this field and permit you to judge for yourselves whether or not the operation should be advised for sufferers from angina pectoris and whether or not there is sufficient encouragement in the work already done to warrant further study and investigation.

From the lofty heights of eminence disquieting advice has been given us. Very recently Sir James Mackenzie[1] has said, "I do not suppose there is a surgeon who would even pretend to understand the morbid conditions which give rise to the symptom complex called angina pectoris. The knowledge of the functions of the vagus and the sympathetic which the surgeon cuts is so imperfect that neither he nor the physician who advises him understands but a fraction of the functions of these nerves." * * * "The employment of such drastic treatment as a surgical operation for a condition so little known does not redound to the credit of medicine." Mackenzie believes that mere pain is in itself not a dangerous symptom and that it is a valuable indicator, to remove which in the present state of our knowledge is extremely hazardous and bad practice. Unless the surgeon has a full knowledge of the function of the structures he cuts, there should be no operation. It is to be wondered if these sane and logical views of Mackenzie would be tempered were he a John Hunter, a Charcot, a Nothnagel, or a William Pepper, all of whom suffered from and died of angina pectoris; if he might not welcome an operation which offered even a fair hope of delivering him from his subjective durance, even were that operation not perfectly understood.

The relief of suffering, irrespective of efforts to cure, often commands the thought and effort of physicians and surgeons. It is frequently necessary to employ morphine to control attacks of excruciating pain even if we are unable to remedy the cause or even understand it. A step

*Read before the North Shore Branch of the Chicago Medical Society, Dec. 2, 1924.

further is the humane work of Dyas[3] who performed alcohol injections or nerve resections of the brachial plexus in incurable cases, such as sarcoma of the humerus, and carcinoma of the breast. An early operative mortality of 50 per cent did not deter patients from submitting to and physicians advising the removal of the Gasserian ganglion in trigeminal neuralgia.

Had no other case but Bacon's[3] been reported, the propriety of the interest in the surgical treatment of some cases of angina pectoris would be vindicated. Bacon's patient, "after weeks in bed was receiving the equivalent of 1/100 grain of nitroglycerin under his tongue, by a trained nurse, every fifteen minutes night and day whether sleeping or waking, from fifteen to twenty-five pearls of amyl-nitrate during the twenty-four hours; 2 grains of sodium nitrate and ¼ grain of morphin every three hours. In spite of this heroic dosage, he suffered eight severe attacks in six hours, during which the family thought the patient was dying and had the last sacraments of the church administered. Mild seizures lasted about five minutes, while severe ones might last for thirty minutes and be followed by a second attack if the nitrite were withheld for more than 15 minutes." During the attacks of crushing, agonizing pain the patient frequently got out of bed, lay prone on his face on the floor, giving vent to slow expiratory grunts. Bacon excised the left superior cervical ganglion under local anesthesia. Following this operation there was a complete relief from all severe symptoms. Five months after the operation the patient had gained 26 pounds. He frequently slept six hours at a stretch and ate of everything. He often walked two to three miles without resting without discomfort. But perhaps this operation should never have been done because the exact mechanism of the relief was not understood!

To venture into a discussion of what are the pathological anatomy and pathological physiology which explain the attacks of angina pectoris requires temerity for a surgeon. The schools of thought in this matter may be grouped as follows:

I. *Angina pectoris associated with pathology of the heart and aorto.*

1. Sir Clifford Allbutt[6] and more recently Wenckebach[4] have placed the emphasis on disease of the proximal aorta; angina pectoris being a sort of "aortalgia."

2. Embolism of the coronary arteries is the cause of a small percentage of the cases of angina pectoris.

3. Sclerosis of the coronary arteries and vasomotor spasm of the coronaries have been suggested to explain the anginal attacks but the evidence in favor of these hypotheses is far from perfect.

4. Sir James Mackenzie stresses cardiac failure and exhaustion.

5. Professor Danielopolu of Bucharest[5] feels that angina is related to intoxication of the myocardium by fatigue products incompletely eliminated.

II. *Angina pectoris unassociated with pathology of the heart and aorta.*

On the other hand, angina pectoris may be divided from the therapeutic point of view into the three classes described by Sir Crifford Allbutt[6]:

1. The high pressure cases, which can often be relieved by reduction of arterial pressure.

2. The syphilitic cases, which are many and are curable as a rule by specific treatment.

3. The ordinary cases in elderly people, remedial by absolute rest—or operation.

In such cases then where all other methods have failed and where the life of the patient has become almost insufferable operation is to be thought of.

At the outset it must be emphasized that the rationale of the surgical treatment of angina pectoris is *not* to remedy the underlying pathology but to interrupt the painful afferent impulses between their origin in the pathological tissues and the central nervous system. It is not impossible, however, that interruption of the pathological afferent impulses will protect the heart and blood vessels from the damaging effects of the efferent impulses thus excited (Danielopolu[4]).

By what route do these impulses travel? Again, a controversy is precipitated. It is more difficult to determine experimentally the afferent or centripetal nerves of viscera than the efferent or centrifugal ones. The latter may be stimulated and the peripheral response noted. There may be no way of noting response to stimulation of an afferent nerve. Moreover, the *character* of the stimulus may have a great deal to do with the

character of reaction in the central nervous system. Mackenzie[1] remarks that "it would be as reasonable to investigate sight by cutting off the eyeball and stimulating the stump of the optic nerve as to investigate the function of an afferent nerve by cutting it and stimulating the stump." He believes that there is practically nothing known of the afferent nerves of the heart.

On the other hand, Wenckebach[4] maintains that it has been known for a long time that the depressor branch of the vagus is the principal afferent nerve of the proximal aorta.

This nerve runs from its origin in the proximal part of the aorta to its upper termination in a group of cells contained in the jugular ganglion of the vagal trunk. There are numerous communications between the depressor nerve and the branches of the cervical sympathetic system[7, 8, 9], and these communications would account for afferent impulses from the aorta being conducted by sympathetic tracts as well as via the vagus to the spinal cord. Grossly, the depressor nerve originates in two roots; one from splitting off from the main trunk of the vagus and the other from the superior laryngeal nerve. The united strand runs free for a stretch and then enters the vagus. If the aortic wall be distended by high blood pressure this nerve will lower the blood pressure and relieve the strain on the aortic wall. If the depressor nerve be cut and the central end stimulated, blood pressure is lowered. The stimulus is passed centripetally to the medulla oblongata and excites vasodilatation and inhibits the vasomotor center and the accelerator nerve of the heart[10]. As far as it has been possible to tell, the depressor nerve has its distribution confined to the proximal part of the aorta and has never been seen to extend to the heart[4]. The degressor nerve is in all probability the only sensory nerve of the aorta. Another effect of stimulating the depressor nerve is the slowing of respiration[4].

As was noted above, fibers from the depressor nerve run to the cervical sympathetic, and in consequence the latter chain of ganglia constitute another point of attack of the afferent pathway. Resection of the cervical sympathetic for relief of the pain in angina pectoris was first suggested by François Frank[11] in 1899 but was not attempted until 1916 when Professor Jonnesco of Bucharest successfully operated on a case. By this operation the afferent fibers from the cardio-aortic plexus are interrupted in their route to the medullary and brain centers.

Jonnesco and the other advocates of cervical sympathectomy removed the three cervical and first thoracic ganglions on one or both sides. The chief objection to this method is that in addition to interrupting the cardio-aortic sensory paths numerous other efferent and afferent pathways are interrupted. It is as if one were to cut through a cable to sever one strand of wire. In consequence of this, cervical sympathectomy constantly has certain undesired sequelae, as myosis, enophthalmos, increased lacrimal secretion, diminished intraocular tension, etc., and possibly occasionally severe sensory changes (to be mentioned below) a diminution in size of the homolateral cerebral hemisphere[12], etc.

Other surgical procedures are to be mentioned, mere division of the cervical sympathetic trunk which obtained some good results in the hands of Coffey and Brown[11]; Brüning did a periarterial sympathectomy of the carotid[12] with betterment to the patient; and Danielopolu and Hristide[13] observed that anesthetization of the second and third left spinal nerves stopped attacks of angina pectoris, and proposed the resection of the roots of the nerves corresponding to the pains in this condition, that is from the eighth cervical to the fourth dorsal.

In carrying out the operation on the depressor nerve Borchard[12] tells us that the landmark is the superior laryngeal nerve which branches off of the vagus at about the level of the lobe of the ear. The incision is on the anterior border of the sternocleidomastoid and all pressure on the great vessels is to be avoided because of the likelihood of circulatory disturbances in the brain. The vagus and the superior laryngeal nerves should not be disturbed in order to avoid vomiting (vagus) and anesthesia of the larynx (N. laryn. sup.) which could lead to an aspiration pneumonia. The vessel sheath must be laid quite free in order to recognize the depressor fibres running from mediastinum to the vagus. If the depressor nerve is not found Kopsch advises cutting through the entire tissue of the prevertebral fascia and even total unilateral section of the vagus nerve has been recommended[11].

Jonnesco[14] has given us explicit directions as to the steps in the total resection of the cervicothoracic ganglions. He uses the incision along the posterior border of the sternocleidomastoid

and retracts the skin, sternomastoid, and neurovascular bundle aside exposing the sympathetic trunk resting on the vertebral plane. The incision at the anterior border of the sternomastoid has been more employed in this country.

Henry[15] believes a better method of removing the cervico-dorsal sympathetic is to approach from behind by means of a resection of the second rib.

Eppinger and Hofer[16] have operated upon the depressor nerve in five cases; Wenckebach[4] believes the operation has been done in 14 cases up to May of this year. In some of the cases, and particularly on the right side, a clearly differentiated depressor nerve could not be made out. But in every case where a definite depressor nerve could be found the pain disappeared at once on the side operated on and the success was generally enduring. In one case after cessation of pain there was sudden death without obvious cause in ten days. There was death in another case because of injury to the superior laryngeal nerve. Perhaps one of the chief perils of this operation is the liability of injury to the superior laryngeal nerve which may cause an anesthesia of the larynx which in turn may lead to an aspiration pneumonia. In Borchard's case[12] in which both the depressor nerve and the sympathetic were sectioned the patient died on the 22nd day postoperative with a mental disturbance.

Sénèque[17] collected 18 cervical sympathectomies for angina pectoris and since then there have been at least nine more cases[18], [19], [20], [21], [22], making 27 in all. The majority of these cases were successful in affording the patients marked relief of their symptoms. Five of these patients died in the days following the operation. Of these deaths, Reid's[20] is of especial interest. "For fourteen days after the operation the result was almost miraculous. The precordial distress and pain were entirely relieved. The cyanosis disappeared. The wound healed promptly. He had been up and around the ward for five days when without any pain or precordial distress he suddenly died."

The immediate collateral results of Jonnesco's operation[23] are (a) extreme diminution of the left palpebral fissure; (b) extreme diminution and fixity of the left pupil; (c) retrocession of the left eye in the orbit. These cause a facial asymmetry due to the sunken eyeball and the contracted pupil.

In Smith and McClure's first case[21] there was the curious complication of priapism after a left cervical sympathectomy, which operation had but partly mitigated the anginal attacks. A right sympathectomy was done two months after the first operation, and following this the priapism did not occur and the anginal attacks became much less frequent and less severe.

In Reid and Friedlander's first case[20] there was still a further unusual complication which was made the subject of a special report by Reid and Eckstein[24]. This patient developed pain that simulated trifacial neuralgia and there occurred marked sensory changes in the entire left half of the body from the head to the costal margin.

Jonnesco has done cervical sympathectomy in over 200 cases and has not been able to discover any ill effects on the heart.

CONCLUSIONS

1. Though there is much lacking in our knowledge of the morbid anatomy and pathological physiology of angina pectoris, and though *modus operandi* of the surgical treatment of this disease is not well understood there has been more than ample encouragement in the work already done to warrant further trial and study of this form of treatment.

2. The cases which should be submitted to operation are those which have neither high blood pressure nor syphilis and are elderly people whom rest has not benefitted (Allbutt's class 3).

3. The correct operation on theoretical grounds is section of the depressor nerve but this operation is both difficult and fraught with no little peril.

4. The most practical and advisable operation is the complete removal of the three cervical and the first thoracic sympathetic ganglions after the method of Jonnesco. Operation on the left side only is to be done first and on the right side later if necessary.

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DISCUSSION

DR. ALLEN B. KANAVEL: In the first place we could not have had a better presentation, and a more sane, sensible suggestion for the surgical treatment of angina than Dr. Christopher has given. The surgery of the sympathetic nervous system opens a wide field and draws attention to the fact that such surgery is something that is of a great deal of importance in every branch of medicine. Anatomists, physiologists, internists and surgeons will be interested in the relation of the surgical sympathetic lesions because of the fact that they know nothing of the afferent fibers. Whatever evidence there is that would suggest that possibly those fibers come up from the cardium, the relations of the anatomy of the nerves are poorly understood. In many cadavers it is almost impossible to find them. It is another thing in which anatomists should be interested and must be interested. The relation of the physiologist has already been dwelt upon and the relation of the medical case has been suggested by Dr. Christopher.

When it comes to the surgical phase of the question, as you know I have had some considerable experience with the removal of the cervical sympathetic. I have not yet seen any patient in whom I think there has been any ill effect upon the lung and heart from surgical sympathectomy. As to the ill effect mentioned by Dr. Christopher, they are surely little as compared with the terrible pain. That there is relief there can be no doubt. If this pain can be relieved, there is no doubt that this is the thing to do. There are cases reported in which cervical sympathectomy has been done and no relief obtained. It is certainly justified in certain cases. I would suggest that in giving a prognosis from cervical sympathectomy the dangerous symptoms should be mentioned. This operation should not be suggested in the mild types. On the other hand, in the severe types it is a procedure worthy of investigation and a fair proportion of the cases operated upon have been relieved for some considerable period of time.

As far as the operation is concerned, we have reasonable justification for the belief that cutting off the afferent branch alone will not give as much relief as cutting the whole cervical sympathetic system. I believe further investigation from an anatomic, physiologic and surgical standpoint should be carried on in the cardiac branch rather than in the deep cervical sympathetic. That would avoid any permanent involvement of the eye though temporary involvement does occur. The operation can be done under local without any difficulty and without any danger to the patient. It is somewhat more difficult to find the posterior trunk than it is to locate the superior sympathetic. There can be no serious objection to the complete removal of the cervical sympathetic if it be found that removal is necessary to the health of the patient. It would seem to me at the present time in severe cases we are certainly justified in performing the operation.

THE EYELASHES SIGN

B. LEMCHEN, M. D.,
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While there are many signs that will differentiate the organic from the functional nervous diseases like the Babinski, Oppenheimer, Gordon and Chaddock's, still such a simple sign as mine is worth reporting as nowadays there are so many accidents where it is imperative to tell whether or not we are dealing in comatose patients with organic or functional cases. The sign is simple. In comatose patients on touching the eyelashes in functional diseases like hysteria, catatonia and epilepsy there is a winking-like movement of the eyelids—while in organic brain diseases like cerebral hemorrhage, severe trauma, unconsciousness following convulsions in paresis and in one skull fracture that I have witnessed no such winking took place.

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SURGERY OF THE LOWER URINARY TRACT*

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Were it not for modern methods of urologic diagnosis by means of cystoscopy, ureteral catheterization, pyelography, and the perfection of comparatively simple renal functional tests, the early recognition of organic disease of the urinary tract and successful surgical treatment would not be possible. Lesions formerly seen only at necropsy are now recognized clinically. In the hands of those experienced in the use of these methods, the diagnosis of surgical lesions of the

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urinary tract has approached an exact science, obviating the untrustworthy interpretation of urinalysis, and decreasing to a minimum the necessity of diagnostic exploration. As a result, the mortality rate in this field of surgery has been reduced to that of general surgery. These diagnostic methods have also led indirectly to nonsurgical remedial procedures, such as catheter manipulation for removal of ureteral stones, fulguration of bladder tumors, application of radium to bladder tumors, and so forth.

By virtue of the anatomic position of the kidney and ureter and relative ease of approach, the principles of exposure, visualized conduct of the operation, and hemostasis as applied elsewhere in the body, have been carried out, and therefore, results of renal surgery have always been comparable to those of general surgery. The bladder, however, while an extraperitoneal structure, situated in the pelvis behind the pubic arch and, in most instances, covered anteriorly by the reflected peritoneum, has been surgically approached with unusual lack of temerity in the application of those principles of exposure, accurate visualized conduct of the operation, hemostasis, and so forth. Failure to obtain adequate exposure and operating in the dark have served to mystify the surgery of this organ. Inaccurate operations, with consequent poor function, have often resulted. Moreover, failure to employ methods of hemostasis has in the past been responsible for a relatively high mortality from hemorrhage. Recent advance in the surgery of the bladder has enabled adequate exposure for visualized conduct of the operation and the application of accurate methods of hemostasis; accordingly, the functional results have improved and the mortality rate has been reduced to a minimum. The evolution of surgery of the bladder was first from the simple perineal or suprapubic cystotomy for retention of urine, and the removal of vesical stone, to the removal of the obstructing median lobe of the hypertrophied prostate gland. Subsequently it has developed further, coincident with the development of surgery of the prostate.

SURGERY OF THE PROSTATE GLAND

The diseases of the prostate gland requiring surgical intervention are benign and malignant hypertrophy. Approximately 85 per cent. of the obstructing enlargements of the gland are benign, 90 per cent. of which are the result of adenomatous hypertrophy, and 10 per cent., of the inflammatory type. Of the 15 per cent. malignant lesions of the gland, carcinoma is the most common; sarcoma and lymphosarcoma are exceedingly rare.

Surgery has seldom been productive of permanent good results in these cases. Bumpus, in an analysis of 135 cases of carcinoma of the prostate, subjected to roentgen examination in the Mayo Clinic, found that metastasis to bones had occurred in 30.3 per cent. In addition, 10.2 per cent. of 362 cases had involvement of the regional glands. On this basis, metastasis found at the first examination contraindicated surgical treatment in approximately 40 per cent. of all cancers of the prostate. The local advancement of the disease with its early involvement of the bladder and surrounding structures, and the discouraging results following the radical operation, have also excluded practically all cases in which there is no metastasis from surgical treatment, except a few in which palliative suprapubic drainage is necessary. It is the benign enlargements of the prostate that are of surgical importance.

The first deliberate prostatectomy was performed by Billroth in 1867 as a perineal operation. Little progress was made in this method of approach until 1891 (Goodfellow). Dittel, Belfield, McGill, and Freyer were among the early surgeons to remove the obstructing gland by the suprapubic route as first executed by Fuller in 1894. Both suprapubic and perineal cystotomy were performed by different men for the removal of bladder stones, and so developed the two methods of approach for the operation of prostatectomy, the perineal route being the more popular in the early years of prostatic surgery because of its lower mortality rate. However, the high incidence of urinary incontinence and urethrorectal fistula following the perineal operation has in recent years caused the general adoption of the suprapubic operation. The perineal prostatectomy, as subsequently developed by Young, obviates such complications, and in his hands is followed by excellent functional results and an exceedingly low mortality rate.

The prostate develops as five distinct lobes from five separate groups of tubules. Lowsley's work has shown that the lateral and median lobes contain the largest number of tubules, the

posterior lobe a very few, and the anterior lobe, as such, reaches its maximal development at about the twentieth week of fetal life, practically disappearing at birth. Wilson and McGrath have shown that the initial activity in benign hypertrophy is in the epithelium of the tubules, and on this basis it seems reasonable to assume that hypertrophy would occur in those lobes containing the largest number of tubules, that is, the lateral and median lobes. It is important in the surgical approach to the gland that benign hypertrophy seldom occurs in the posterior lobe, and practically never in the anterior. The suprapubic transvesical route approaches directly those lobes involved in benign hypertrophy, without jeopardizing the external sphincter, on which there is complete reliance for control before and after prostatectomy for an intravesical gland. Furthermore, it possesses the advantage of affording opportunity to deal with associated lesions of the bladder, stones, and diverticula when present. From the standpoint of mortality rate alone, there is now no choice between the perineal and suprapubic operations. The mortality rate in the early years of prostatic surgery was exceedingly high, and only through the recognition of the associated renal insufficiency, and its treatment, together with accurate surgical procedures, has the mortality rate been reduced.

Preceding the advent of reliable renal functional tests, it was not possible to estimate the amount of associated renal damage, but uremia was the foremost cause of death following prostatectomy. The uniformly high mortality rate following prostatectomy performed in the presence of chronic renal insufficiency led to the two-stage operation of suprapubic cystostomy preliminary to prostatectomy, which resulted in a marked reduction in the mortality rate. The two-stage prostatectomy in itself, in terms of operations, decreases the death rate by one-half, even though the same number of patients die. It is noteworthy that when the two-stage operation is employed, most patients who die succumb after the preliminary drainage or first stage, because of the renal insufficiency. Patients who survive the first operation, and recover from the renal insufficiency, usually survive the second stage prostatectomy. In considering mortality rates, the point to be emphasized is that the mortality rate of the first procedure is not included in the mortality statistics of the operation of prostatectomy, the second stage, and therefore, the latter mortality rate is reduced. During the last two years the operation of suprapubic cystostomy at the Mayo Clinic has been accompanied by a mortality rate of 8 per cent. Aschner has recently reported a rate of 47 per cent. following cystostomy in cases of prostatic obstruction. Even though the deaths following the first stage of a two-stage prostatectomy are usually not charged against the operation of prostatectomy, the result is the same, so far as the patient is concerned.

Relatively simple and reliable renal functional tests, which determine when a patient may or may not be operated on with relative safety, have aided in the standardization of the treatment of prostatic obstruction. Of the renal functional tests, the phenolsulphonephthalein test of Rowntree and Geraghty and the blood urea estimation are most reliable. Only under unusual circumstances should prostatectomy be done if the phenolsulphonephthalein return is less than 20 per cent., and the retention of urea more than 50 mg. for each 100 c. c. of blood.

In the evolution of the operation of prostatectomy, the two-stage operation has fulfilled a distinct purpose in emphasizing that preliminary drainage of the bladder is essential to the successful management of the patient with an obstructing prostate and resultant renal insufficiency. Drainage of the bladder by cystostomy, when the patient survived that operation, was followed by recovery of renal function, so that the second stage could be done subsequently with little risk. A review of those cases in which death occurred after the preliminary cystostomy shows that practically all the deaths were from acute uremia. This led to the recognition of the fact that all patients with prostatic obstruction and residual urine were potentially in a state of uremia, if not actually so, at the time of operation, and that the sudden emptying of the distended bladder precipitated acute uremia. It was also noted that slow withdrawal of urine from a distended bladder did not precipitate acute uremia.

In 1920, van Zwalenburg described a method of gradual decompression by means of a urethral catheter, which obviates the preliminary cystostomy and accomplishes the same purpose with very little risk to the patient. It eliminates the mortality rate of the first stage of the two-

stage operation, and converts the procedure into a one-stage operation, which allows the application of the general principles of surgery, that is, exposure, visualized conduct of the operation, and accurate hemostasis. Judd and Cabot were among the first to employ the one-stage operation and to apply these principles. Not only is it unnecessary from the standpoint of mortality rate and functional result to utilize the two-stage operation of prostatectomy, but in the majority of cases it is inadvisable. However, because of associated lesions of the bladder, such as stones in 12 per cent. and diverticula in 5 to 7 per cent., and intolerance to drainage of the bladder by urethral catheter, preliminary to prostatectomy, in approximately 7 per cent., the one-stage operation cannot as yet be routinely executed. However, in the Mayo Clinic, in 1923, 81 per cent. of 202 prostatectomies were performed by the one-stage method with a mortality rate of 3.1 per cent. A review of our own cases, and the statistics of others, tend to show a higher mortality accompanying the two-stage operation. Aschner reports a mortality rate of 8.5 per cent. of 233 patients following the second-stage prostatectomy (excluding the deaths from the first stage), as opposed to a rate of 6.8 per cent. of forty-four patients by the one-stage operation.

Patients with prostatic obstruction, because of their age and the associated cardiovascular changes of that age, with the additional renal insufficiency incident to the urinary retention, must be regarded as substandard risks. Nevertheless, the marked reduction in the operative mortality rate as the result of preliminary treatment and modern surgery, with satisfactory results in 90 per cent. of the cases, offers these patients a more favorable prognosis than has hitherto been given.

MALIGNANCY OF THE BLADDER

Malignant tumors of the bladder had been suspected clinically and found at necropsy prior to the advent of the cystoscope, but this instrument furnished a means for their early recognition, and with recognition a variety of methods of management developed. In the bladder, as elsewhere, malignancy varies in degree: tumors of low-grade malignancy which progress slowly do not tend to metastasize early, nor to recur after removal; those that develop rapidly metastasize extensively and early, and tend to recur after removal. However, until recently no means were available to determine the degree of actual malignancy as a guide to treatment. Broders' classification furnishes an exact estimate of the degree of malignancy, an exact guide for treatment, and a means of establishing a relative prognosis. This classification is based on the amount of differentiation of the cell. Malignant tumors of the bladder which show the most differentiation of the epithelium are of the lowest grade malignancy, while those showing no tendency toward differentiation are most malignant. On this basis, four grades of malignancy have been established.

The treatment of malignancy of the bladder is dependent on the location of the growth, its extensiveness, absence or presence of metastasis, and the degree of malignancy. Bumpus, in a recent review of 527 cases from the Mayo Clinic, discussed the relative merits of various forms of treatment. His conclusions substantiate the relatively poor results reported by methods other than surgery. Fulguration was employed in eighty-four cases, with recurrence in 35 per cent., as determined by an accurate follow-up system. Radium alone, or radium in conjunction with some other form of treatment was employed in 212 cases, in thirty-four of which radium alone was used; five deaths ensued (14.7 per cent.) The value of radium as used in the remainder of the cases is problematic, as it was used in combination with cautery and other methods. From a strictly surgical standpoint these cases were all inoperable, but it would seem that radium was instrumental in retarding growth and prolonging life. Two hundred and forty patients, including seventy-eight who also had radium treatment, were operated on, excision or segmental resection being done; twenty-seven deaths ensued (11.25 per cent.) One hundred and five of 196 patients are alive from one to six years. Without entering into a discussion of the relative merits of the various nonsurgical methods, it should be stated that during the past few years the method of surgical diathermy has been productive of encouraging reports, which must stand the test of time and wider application.

From the surgical viewpoint, in the absence of metastasis, localized vesical tumors should be exercised by cautery or segmental resection, even though the trigone and one ureteral orifice are involved; for, according to our present knowledge, no other method of treatment of operable malig-

nant tumors of the bladder offers an equal chance for cure. If only one ureter is involved, and the blood urea is normal, indicating good renal function on the opposite side, division of the ureter, ligating and dropping it back, has been attended by a lower mortality rate than transplantation of the ureter under similar circumstances. Although the average operative mortality rate in the Mayo Clinic series was 11.25 per cent., the mortality rate attending resections of the bladder for malignant tumors involving the base and one ureter is higher than similar procedures for tumors of the dome and lateral walls. It is hoped that future alertness on the part of the patient and physician will stimulate earlier recognition and earlier institution of treatment for malignancy of the bladder, and thus improve the prognosis.

VESICAL CALCULI

Stones in the bladder are usually the result of urinary retention from prostatic or strictural obstruction, a foreign body as a nucleus, or a primary renal stone, or ureteral stone. In a review by Crenshaw of 606 cases of vesical stone observed at the Mayo Clinic, 95.2 per cent. occurred in males in whom obstructive lesions had resulted in retention, and only 4.78 per cent. in females. While stones may occur at any age, 70 per cent. of the patients having them were more than fifty years of age. There was associated prostatic enlargement in 60.34 per cent., associated diverticula of the bladder in 4.57 per cent., associated carcinoma of the bladder in 3.26 per cent., and stricture of the urethra in 9.8 per cent. In 577 patients operated on, the stones were single in 386 (66.9 per cent.) In eleven instances, vesical calculi, prostatic hypertrophy, and diverticula were associated.

Lithopexy may be resorted to in many instances, but more often suprapubic cystostomy is necessary. When prostatic hypertrophy and large single stones or multiple small stones are associated, there is usually considerable renal insufficiency, requiring the two-stage operation with prostatectomy as the second stage.

DIVERTICULA OF THE BLADDER

Diverticula of the bladder, until the advent of the cystoscope and its allied methods of examination of the bladder, were known only as a necropsy finding. However, with the modern methods of urologic diagnosis diverticula have become important surgical lesions of the bladder, resulting in retention, obstruction, and renal insufficiency. They may attain a size equivalent to the entire capacity of the bladder and be a serious menace to the life of the patient. Recognition is possible by cystoscopic examination or cystogram, and those of an ounce or more capacity with retention and inadequate drainage should be treated surgically. They are associated in from 5 to 7 per cent. of obstructing lesions of the prostate. While they usually empty into the trigone, or near one ureteral orifice, the ureter is seldom involved, and rarely empties into the diverticulum. Small diverticula may be removed transvesically by the method of inversion, as described by Geraghty, but the larger ones demand extravesical dissection; they are usually readily separated from the ureter. In those with capacity equal to the bladder, causing marked renal insufficiency, suprapubic drainage of the diverticulum for some time previous to their excision allows stabilization of renal function and contraction of the diverticulum. From 1894 to 1923, there were 133 diverticula of the bladder operated on at the Mayo Clinic with six deaths. The excision of retention diverticula of the bladder is attended by excellent function results.

ANESTHESIA IN SURGERY OF THE LOWER URINARY TRACT

The use of other than inhalation anesthetics is a manifestation of progress in surgery of the lower urinary tract. Inasmuch as many of the surgical lesions of the bladder are obstructing, variable degrees of renal insufficiency are often associated, particularly in cases of prostatic hypertrophy. As the depressant effect of ether, the universal anesthetic, and the resultant necessity for short anesthesia was recognized, accuracy in the conduct of the operation was sacrificed for speed, resulting in inaccurate and often incomplete operation, and little attempt at hemostasis. The study of the cause of death following the operation of prostatectomy revealed, in order of frequency, uremia, hemorrhage, pneumonia, and sepsis. Because of its depressant effect on damaged kidneys, ether was a factor in producing uremia, the sacrifice of accuracy prevented adequate control of bleeding, and inhalation pneumonia was often directly referable to the anesthetic. The avoidance of inhalation anesthesia allows time for accurate conduct of the

operation and for hemostasis, and if pneumonia occurs, it is not of the inhalation type, but embolic in origin.

Spinal anesthesia has been successfully used in surgery of the lower urinary tract, but although it provides complete anesthesia and relaxation, it has the disadvantage of reducing blood pressure with coincident reaction, at times to an alarming degree, and cannot, therefore, be accepted as a safe anesthetic. The sacral anesthesia, popularized in this country by Labat, possesses all the advantages and none of the disadvantages of spinal anesthesia, and has been accepted as the ideal anesthetic in this field of surgery.

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THE TREATMENT OF DIABETES FROM THE VIEWPOINT OF THE GENERAL PRACTITIONER*

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When a patient walks into a general practitioner's office and a diagnosis of diabetes is made, a very insistent question immediately presents itself. In the light of the present day knowledge is he justified in accepting the responsibility for the treatment of this case? Should he refer the case to some one who is specializing in the management of diabetes? The law grants the doctor the privilege of accepting this responsibility, and the patient has given him a vote of confidence by appearing at his office for examination. At another time diabetes may be thrust upon him with one of its wicked emergencies and he will then be confronted with the necessity for action. What action may he take with safety and profit to the patient? The present discussion is presented with the hope that it will clarify the problems involved and thus allow a more satisfactory solution of them.

Nature of the Disease. In diabetes there is a failure in glucose metabolism. A normal man may eat in the course of a day a quantity of glucose formers[1] which will yield 400 to 600 gms. of glucose and yet show no sugar in his urine. In fact the quantity of sugar which he can eat is limited not by his metabolism of this sugar but by the tolerance of his digestive system. If he indulges in an excess of sugar he may develop a diarrhea associated with cramps or he may vomit the food eaten. A second man may eat a meal unusually rich in carbohydrates, and sugar will appear in his urine in one to two hours time and will persist during the period of maximum absorption. Such a man is said to have an "Alimentary Glycosuria." The factor of safety in his glucose metabolism is smaller than normal, but this does not mean that it will necessarily be reduced to a pathological point. A third man eats what appears to be a normal diet of glucose formers and he shows large quantities of sugar in his urine. This man is said to have diabetes and we immediately begin to classify diabetes into the mild and severe classes. Thus on a fixed diet one patient will show a 24 hour excretion of sugar amounting to 5 grams and another may show an excretion of 40 grams. It is obvious that other things being equal one of these cases is relatively mild as compared with the other. If we refer a moment to Fig. 1, "The Diabetic Flame"[2] it will be noted that there are 9 sticks of kindling present and that 5 of these are burning and 4 are not. It can be readily seen that so far as the flame is concerned it makes a vast difference as to just how many of these sticks of kindling are actually burning. The difference is readily realized by reference to Fig. 2, "The Normal Flame," where all of the kindling is burning.

The statement has been previously made that in diabetes there is a failure in the glucose metabolism. This should now be extended by saying that in diabetes the fundamental and essen-

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tial defect is the failure to oxidize glucose. There are other defects which quickly arise when the glucose is not burned and some of these may be the precipitating cause of death in any given case. They however are secondary ones and

Fig. 1. Diabetic Flame

should be removed from the picture until the primary defect is fully appreciated and established in its central place. It is to be further noted that this loss of oxidative capacity for glucose is a quantitative process which may fluctuate widely from time to time and that the severity of a given case is measured by the extent of this loss. More positively we may say that it is measured by the number of sticks of kindling

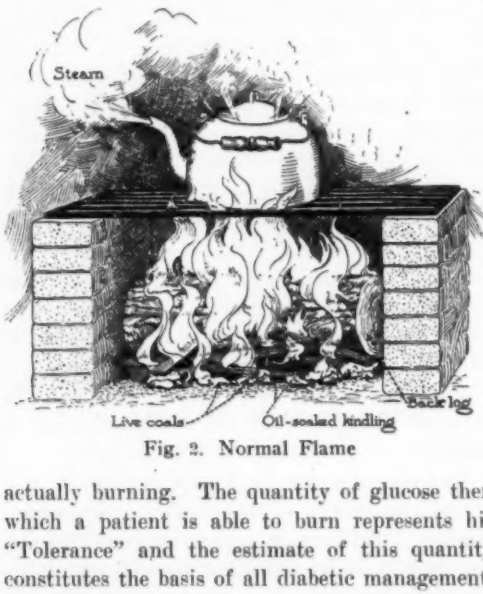

Fig. 2. Normal Flame

actually burning. The quantity of glucose then which a patient is able to burn represents his "Tolerance" and the estimate of this quantity constitutes the basis of all diabetic management.

It is obvious therefore that when a diabetic asks his physician what food he must eat in order to avoid a glycosuria, the physician simply can not answer the question. The patient has asked a qualitative question and there is no qualitative answer, strictly speaking. The answer required is a quantitative one. The situation is very similar to one arising when an Englishman, who speaks no German, addresses a German, who understands English but speaks no English. The German may understand perfectly any question asked him, but he can not answer because there is no medium of communication.

Principles of Diabetic Management. It is well therefore to see how this quantitative question has been answered. So the principles involved in the desugarization of a diabetic and in the establishment of him on a maintenance diet adequate for work will be briefly presented. This may be best understood by a reference to the two flames shown in the charts. Flame No. 1 shows the conditions present in diabetes. It will be noted that there are some "Live Coals" present which represent the glucose in the process of complete oxidation to CO_2 and H_2O. If no glucose was oxidized life would be quickly extinguished. Just as the flame would cease to burn without the coals. Some of the sugar is not burning. This is accumulating in the tissues and appears in the urine. The kindling which is burning is soaked in oil. This represents activated glucose or insulin soaked glucose. Then there is a big back log of fat present which is far too large for the bed of coals. This is smouldering and pouring out large quantities of smoke. The smoke represents B-oxy-butyric acid, diacetic acid and acetone, the so-called acetone bodies. The steam which is escaping is a measure of energy transformation by the kettle. Since the heat derived from the flame is small, the quantity of steam resulting is also small. In Flame No. 2 the normal metabolism is pictured. All of the glucose is insulin soaked and is burning. The back log of fat is commensurate with the bed of coals beneath. There is no smoke. There are no acetone bodies. The energy developed as shown by the steam is adequate to the bodily needs. This conversion of the diabetic into the normal state may be effected in two ways.

Diet Adjustment Alone. If diet adjustment

alone be utilized the process may be visualized in the following manner. The sticks of kindling which are not soaked in oil and which are not burning must be removed from the fire. The back log must be reduced in size so that it does not smother out the live coals. These changes give a flame, which is now burning cleanly all the contituents, but one which may furnish a smaller quantity of steam than is desired. In diet adjustment then the patient is desugarized by withdrawing the glucose until the quantity fed is below his tolerance. Simultaneously with this the fat also must be reduced. When desugarization is accomplished by these methods the food intake may be so small that it will be necessary to confine the patient to bed since there is not an adequate energy production for additional activities. Gradually the fire is built larger by the cautious additions of glucose as the body supplies insulin sufficient for its oxidation. Later small quantities of fat may be added also. This process is spoken of as building up the patient's tolerance. Such a procedure is slow often involving 5 to 6 weeks.

Diet Adjustment Plus Insulin. With the use of insulin we have theoretically a much simpler method of solving the problem. If the kindling can all be soaked in oil, it will burn. If it burns, then the back log will cease smouldering and will burst into flames. The smoke will disappear and the quantity of steam developed from the kettle in a unit of time will be increased. Consequently as in the diagram the conversion of Flame 1 to Flame 2 is accomplished by the addition of more oil, so the same transformation from a diabetic to a normal state may be accomplished by supplying more insulin to the body. The quantity of insulin soaked glucose will then be sufficient to allow the oxidation of the fats to go to completion and to prevent the formation of acetone bodies. The energy then furnished by the foods will be adequate to make a curtailment of the patient's activities unnecessary. However this theoretically simple solution fails in its practical application. If the dose of insulin injected be too great for the quantity of glucose present in the body then a toxic condition appears to which the name of "Hypo-glycemic Reaction" has been given. The reaction is so named because it is present when the blood sugar is unusually low and because it is relieved by the ingestion of any type of glucose former.

The physician is again confronted with a quantitative relationship which must be solved. The three variables involved are the available food in the body and diet, the patients tolerance, and the oxidative capacity of a given dose of insulin in a particular patient. It is safe therefore to say that any scheme of treatment which ignores such quantitative relationship is not a sound one therapeutically.

Conditions Necessary for the Treatment of Diabetes. Since the treatment of diabetes resolves itself into a metabolic study in which the food intake is accurately known and the output of sugar is carefully measured there must be developed a certain amount of machinery to accomplish these ends. A trained dietician must be available who can fill a quantitative diet order and who can use such ingenuity in the selection of her foods as will meet the demands of the appetite. A laboratory worker is required to make the various analyses needed. Most important of all there should be a resident physician who will see to it that the numerous details incident to the running of such a metabolic study are carried out. One of these workers must also assume the responsibility for the education of the patient in food values, diet calculations and changes, methods of testing urine, methods of injecting insulin, and other details incident to the handling of a case. It is obvious therefore that it would not be economical for a general practitioner to attempt to provide this machinery. Long ago this same economic problem was presented with reference to surgical cases. Here and there a man acquired an equipment, a nurse and affiliated with himself a fellow practitioner who would assist in operative procedures or give anesthetics as the case demanded. Such an arrangement became the nucleus of a small hospital and was gradually extended through the support of other practitioners, who found this a more economical method of handling surgical cases. The public and the physicians themselves next became dissatisfied with the handling of obstetrics in the home and so the maternity wards were added to this same hospital and these wards have grown rapidly in popularity. So far as medical cases are concerned the average small hospital is simply a boarding house. These cases can be handled almost as well at home as in the

hospital for there has been no attempt made to install medical equipment. The time has now arrived when this next step forward in the development of the hospital should be taken. Diebetes is a disease which demands this equipment and offers an incentive for its installation. If it is installed, good general practitioners will grow into good medical men just as good general practitioners have grown into good surgeons.

Management of Diabetes in Absence of Equipment. If then it is impossible for a general practitioner to undertake the treatment of diabetes without the equipment discussed above what shall he do with the cases coming into his hands? We may conclude therefore, he is justiged in rendering "First Aid" only to diabetic patients. The question then arises as to when is "First Aid" required and of what does it consist? It is required when some complication occurs. A symptomless patient in whom a glycosuria has been accidentally discovered should be left alone until such a time as his regime can be changed under accurately controlled conditions. If he is symptomless he is burning enough glucose to support his metabolism. The fact that he is wasting a large amount of glucose in the urine is not of great significance. He is not at that time in danger as to life since he has adequate energy for his daily needs. The simple presence of a glycosuria then constitutes a potential danger. It is not necessarily a signal that this danger has arrived. The complications which constitute emergencies are, (a) acidosis, (b) dehydration states not associated with acidosis, and (c) acute inanition.

ACIDOSIS

Once the presence of an acidosis is established, the condition should immediately be considered grave. It should demand as careful consideration from the physician as an intestinal obstruction or an attack of acute appendicitis.

Acidosis Without Symptoms. If the patient simply has acetone bodies in his urine and no symptoms, and if the condition is not progressive, he may with safety be treated by the method formerly advocated by Joslin[3] for desugarization. He is put to bed, kept warm and supplied with an abundance of fluids. Putting the patient in bed lessens his energy requirements by approximately 35%. Consequently a substantial cut may be made in the fat of the diet. At least half of it should be removed. Such a reduction may be sufficient to stop the formation of acetone bodies. During the first 24 hours, 30 grams of bicarbonate of soda should be given to replace the bases excreted in the urine in combination with the acetone bodies.

Acidosis with Symptoms. With the onset of definite symptoms of acid intoxication, action should be energetic. The case becomes one which must receive insulin at once and be transported to a diabetic center. A few hours delay may plunge the patient into a coma and multiply the difficulties of handling the case 300 to 400 per cent. The plan here presented with certain modifications follows very closely one[4] recently described by Woodyatt based on his experience with this class of cases. Certain facts of insulin action must be known before it can be used with safety:

1. By reference to Fig. 1 it will be seen that insulin acts only on glucose. If the supply of this is exhausted the patient may pass a sugar free urine and yet be suffering from acid intoxication.
2. Insulin action persists for 8 hours but it is maximal at the end of the 4th hour.
3. An overdose causes symptoms which are immediately removed by the ingestion of any glucose former.

As soon as the diagnosis is made the patient is given subcutaneously 60 units of insulin. This insulin will act over a period of 8 hours. A hypoglycemic reaction will not result if during this time he be given also 60 to 100 grams of glucose. A small glass of whole milk or a small glass of unsweetened orange juice each contain 15 grams of glucose. Hence then he may be given 4 to 6 glasses of such food at 1½ to 2 hour intervals. If the urine be examined by a quantitative test for sugar at the end of each two hours, then the dose of food to be given can be more easily regulated. At the end of 8 hours a second dose of 40 units of insulin is to be given. He can then be protected in the same way with food over the next 8 hours. During these 16 hours the patient should also be given 30 grams of Sodium bicarbonate. This usually brings the patient to the morning of the second day. By this time the acidosis is under control and the problem is now one of establishing him on a diet with interval feedings.

The following diet is one adequate for the maintenance of a patient weighing 50 Kilo (110 lbs.) at bed rest.

800 c.c. (27 ounces) milk and cream equal parts
300 c.c. (10 ounces) orange juice
2 eggs

This may be measured with equipment present in any household. It can be divided into 5 feedings per day so that maximum opportunity will be given the body to utilize its own insulin. Such a diet has a glucose equivalent of 104 grams. At this state the patient is probably burning 15 to 20 grams of glucose with his body insulin. We must therefore give sufficient insulin to take care of 80 to 85 grams. Consequently at 8 A. M. 30 units of insulin may be given and at 6 P. M. another 30 units. At 10 P. M. and 1 A. M. a careful observation is to be made for a hypoglycemic reaction. If the samples of urine collected at different periods of the day be examined for acetone and diacetic acid, some knowledge can be obtained as to whether these bodies are increasing or decreasing. Of course with an increase in the acetone, the insulin dosage must be raised and the patient protected accordingly. This plan of management is summarized in Table 1.

TABLE I

MANAGEMENT OF ACIDOSIS CASE WITH SYMPTOMS

Weight of Patient 110 lbs. or 50 Kilo

1st Day		
3 P.M.	Diagnosis made	50 gms. (1 oz.) Sodium Bicarbonate to be given in divided doses before morning.
4 P.M.	60 units insulin subcutaneously. Protect by total feeding of 60-90 gms. of glucose (20 to 30 ounces of orange juice) 3 to 6 ounces to be given at 1 to 2 hour intervals. Examine urine at 2 hour intervals for sugar.	
12 P.M.	40 units insulin Protect with 40-60 gms. glucose at 1 to 2 hour intervals. Examine urine at 2 hour intervals for sugar.	
2nd Day		
8 A.M.	30 units insulin *Feed Diet* 800 c.c. (27 ounces) milk and cream equal parts 300 c.c. (10 ounces) of orange juice 2 eggs	*Value* Glucose 104 Carbohydrate 70 Protein 39 Fat 108 Calories 1408
6 P.M.	30 units	
9-10 P.M.	Examine carefully for reaction	
12-1 A.M.	Examine carefully for reaction	

Such a regime may be continued until the patient can be transported to a diabetic center, where his tolerance may be recovered and his education completed.

Dehydration States not Associated with Acidosis

In these cases the patient is burning sufficient glucose to protect his metabolism against the incomplete oxidation of fats. He is however, passing large quantities of urine in an attempt to rid the body of the excess glucose. He may be drowsy, somnolent and may actually have a temperature. If such a case is put to bed with a definite restriction of his diet, he will at once show improvement. If he weighs 50 Kilo or over he can then be given the diet suggested above for the second day of acidosis treatment.

Acute Inanition

This state is one which requires insulin treatment before any progress can be made. It is therefore best to conserve the patient's energies and get him to a diabetic center at once. It is uneconomic to attempt treatment at home since the emergency is rarely so great that the patient can not be transported.

Summary and Conclusions

1. In diabetes the fundamental and essential defect consists of a quantitative failure in glucose metabolism.

2. In treating diabetes the extent of the failure is first determined by measuring the residual capacity for glucose oxidation (patient's tolerance.) This tolerance is next built up by dietary means or supplied by insulin.

3. The treatment requires a definite amount of machinery, the maintenance of which would be unprofitable for individual physicians, but which should be supplied by the various hospitals serving a community. This equipment could then be made available to more than one physician.

4. A "General Practitioner" without such equipment is justified then in giving "First Aid" only to the emergencies of diabetes.

5. A plan for "First Aid" to a case suffering from acidosis is presented. The other emergencies are rarely so acute as to prevent transportation of the patient to a hospital with diabetic service.

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DISCUSSION

DR. DENEEN, Bloomington, opening the discussion, said:

I am sure we all appreciated Dr. Keeton's unique way of presenting the subject. He dealt, of course, only with the complications, but he made the statement that the patient is a quantitative proposition, not qualitative. In that respect I would like to say when you deal with 15 per cent. fruit and 15 per cent. vegetable, you are dealing with a qualitative proposition. I have seen diabetics who will run sugar on a certain amount, 15 per cent. fruits. Take them off and put them on 15 per cent. vegetable and you will get rid of the sugar. I believe there is a great difference in the quality that you use. It is better to have them 15 per cent. vegetable where you are dealing with a high degree of carbohydrates than if you are giving them straight sugar as we have in the past. There is a great difference in the individual, especially in the handling of insulin. I have had some that handled insulin beautifully. I have seen some good effects and some very bad effects. One of the bad effects is where you have gangrene. There it is better to get the diabetic sugar free upon diet and use the insulin afterwards. I have had a patient that died under the anesthetic with a most beautiful pink color, who was sugar free after using insulin however having gangrene.

We had two cases of ruptured appendix, in which they went through appendicitis, gave them insulin, got them sugar free with the insulin, put them on the table to remove the appendix, and later something happened to the heart and the patient passed out. A couple of them passed out within twenty-four hours. When we get them sugar free upon diet in most cases they do not need insulin. If they did we use it afterwards.

I remember one gangrene case we had that went along beautifully with insulin. After the operation the patient developed edema. She was gone from the hospital, seventy-five miles away. The doctor over there wrote me and I told him to discontinue the insulin, after which time the edema cleared up.

We are only using insulin in emergencies. I find that the majority of diabetics get along much better without the insulin. They are easier to handle. The psychology of the patient is better because in a short space of time the patient objects to the hypodermics. They become painful and they quit.

Another thing I find out is the torture of forcing the patient to weigh their food, feeding by scale, weighing it out. The first thing we know the patient quits. I have found out if they run a little sugar once in a while they do better than the patient that is sugar free all the time.

I find there is another type of patient that does very poorly upon insulin, that is the type which runs low specific gravity of the urine, having sugar intermittently, with low blood sugar, around normal, or only slightly raised. They are classified as renal diabetics. The few patients I had of that type soon went bad on insulin. They went better for a while, their general symptomatology was better, but those patients died in a shorter space of time than if I had not used insulin. More and more I am convinced that the use of insulin is purely an emergency proposition, and as Dr. Keeton says, if they run sugar without acidosis it is not going to hurt them very much.

DR. R. T. PETTIT, Ottawa: I have had experience with eight cases of diabetic coma. Naturally they were of a more severe type than the ones Dr. Keeton mentions. They were in profound coma. I used the same plan Dr. Keeton advocates and gave even larger doses. In one case I gave 200 units in the first eight hours.

I would like to emphasize if you are going to treat emergency cases of coma, be prepared to stay with your patient continuously. Do not turn him over to some one else. When you get them along for twenty-four or thirty-six hours then the problems that taxes all your ingenuity and your knowledge is how to let go of the bear's tail. You have got hold and you don't know how to let go. It is an extremely difficult thing to know exactly how you are going to do it. However, in coma we are dealing with an emergency and if we are going to use insulin we must use radical methods.

DR. ROBERT KEETON, Chicago: In closing I will endeavor to answer the discussion elicited in the reverse order. Relative to the recognition of acidosis I divided the cases into two groups (a) those cases which presented acetone in the urine but which showed no symptoms as such leading to a diagnosis of the condition, (b) those cases in which not only does the urine show acetone bodies but the patient presents all the symptoms of impending coma. The latter class of cases are the real emergencies. They are to be treated while the patient can eat and co-operate. If they are allowed to slip into coma not only is the difficulty of handling the case enormously increased but every hour of acid intoxication does damage from which recovery becomes increasingly difficult.

With Dr. Pettit's advice that the physician must stay continuously at the bedside of an acidosis case, I agree. His vivid description of the attention that must be paid to the details of management and the difficulties which the physician experiences in establishing the patient on a diet after the acidosis has been neutralized summarises admirably the experience of others in handling these cases.

Dr. Carr has discussed cases where the coma is definitely established and where co-operation of the patient is lacking. With such patients one is decidedly handicapped in knowing whether he has given an overdose of insulin or not. However the requirements for the use of large doses of insulin are just as urgent as in the cases of pre-coma. The fact that many of these cases do not recover even when the acidosis has been controlled signifies that the damage done by the acid intoxication was irreparable and not that the insulin treatment per se was a failure. To revert to the illustration previously used the danger in all these cases is that the physician will not build a sufficiently hot glucose insulin flame.

Dr. Deneen has raised several points which should be discussed briefly. In the first place I think most men agree that insulin should be omitted if a case can be handled with dietary measures alone. It is not considered good treatment to feed patients beyond their requirements.

Dr. R. T. Woodyatt in an address before the Society of Internal Medicine, Chicago, has called attention to the arterio-sclerotic type of diabetes. In these cases the insulin is not always of great value. If a patient is excreting 20 grams of sugar in the urine an injection of 20 units of insulin may not cause any reduction in the urinary sugar. If a reduction does occur, it is much smaller than was to be expected from the dose given. He has suggested that in these cases there is primarily no lack of insulin but rather some tissue defect. The cases of gangrene which Dr. Deneen has found tolerated insulin poorly would then belong to this type of diabetes.

The mental attitude of a diabetic patient is very important. His tolerance often fluctuates widely with the coming and going of periods of mental stress. Therefore, in the management of any given case this factor must be considered. Here is just another opportunity for the doctor to treat his patient as an individual and not as a case of diabetes.

I wish to take issue with the doctor's contention that 10 grams of glucose given in the form of orange juice is more harmful to the patient than 10 grams given in the form of 5% vegetables. Ten grams of glucose is 10 grams. It makes no difference what is its source so far as the ability of the body to oxidize it is concerned. The ultimate chemical structure is the same and its oxidation is determined by this structure. However, in discussing tolerance of a patient we must always consider the quantity of glucose presented to the cells per unit of time. Now 10 grams of glucose as C. P. glucose is absorbed more readily from the intestinal tract than 10 grams distributed in 333⅓ grams of 5% vegetables. Hence the doctor should have called attention to the fact that any method of feeding glucose which gives a slow uniform absorption is less apt to overtax the tolerance than a method which dumps the same amount of glucose into the blood in a short interval. Recognizing this principle I have in same cases adopted an extra feeding at 11 P. M. for cases in which I am quite anxious to avoid the use of insulin. Sometimes from 10 to 15 grams of extra glucose per day may be fed in this way.

PERSONAL EXPERIENCES IN THE TREATMENT OF ATROPHIC RHINITIS*

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This subject is so old to the rhinologist and so much discussed and everybody has become so disgusted with it that it takes considerable nerve to try and present a paper like this to you. And I wouldn't do it if I didn't think I had stumbled on to some things which I consider of help in the treatment of these cases.

All the text-books, as you know probably, discuss the symptoms and all that; but, when it comes to treatment, they discuss it with the idea of keeping them clean and letting them alone, and that no treatment does them any particular good. I assume all of you are perfectly familiar with all the text-books and literature on the ear, nose and throat. I am not going into any books at all. I am going to tell you a little experience I have had in trying to treat this disease of unknown etiology. Nobody knows what causes it, so far as I know. Of course, there are probably two dozen different theories as to the etiology. Some are very strong on sinus infections; that suppurative infections of the sinuses cause this disease. You do have a great many cases of sinus infection with atrophic rhinitis. Whether the ozena is due to the sinus trouble or whether it is the cause of it is hard to tell. There is no doubt that syphilis in some of these cases is some element of that infection. Whether they have syphilis and the ozena independent of each other, I don't know. Tuberculosis is another thing that plays the same role. Some are very strong for bacterial infection as the cause of this trouble. Some that the nostril is too big, and some that it is too small. There is no one theory that seems to hold up under trial.

My idea in watching these cases for a good many years and the bad results we got from treatment is that it was not a local disease at all and never had been a local disease. It was simply a local manifestation of a slow systemic toxemia of some sort which we don't know.

I don't know whether any of you are connected with any large clinics or not. But some four or five years ago, the question of bacteria in these cases was quite the rage. At that time the firm of Parke, Davis and Company sent out to all the clinics, I think, all over the country culture tubes and asked all of us holding clinics to make inoculations of these scabs, and to send it back to them. They got these cultures from all over the country and they attempted to make a bacterial vaccine, and they did, and sent it back to us to use. We started in to use it. We found that the dispensary patients didn't take very kindly to the hypodermic needle, and we didn't like to try it on private patients. But

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Springfield, May 7, 1924.

we got no results, and I have never seen any mention made of those experiments at all. I have never seen any mention of it in the literature.

We all know what the particular bacteria is that causes the stink. If you want to smell something that is positively nauseating, if you will go over to Detroit and go into the P. D. laboratory, you can't get within three feet of the culture. It comes right through the glass.

There is no question but what these cases are very offensive to themselves, and more so to the friends who have to get near them. And it practically throws the doctor into nervous prostration when he gets a case coming to him for treatment.

The treatment of ozena has been one of the most unsatisfactory things in rhinology. It is the opprobrium of the profession. We don't like to see them come near us.

The more I saw of these cases, the more they came to bother me, the less success have I had with any kind of local treatment outside of keeping them clean. But there was something back of all of that, which was a systemic infection. I don't know what the cause is, but I believe it is a systemic poison of some kind. And the idea was, if it is a systemic infection of some sort, what are the remedies that we have used that have an effect upon these infections of various kinds through the body that we don't know or have no specific treatment for. My mind went back to years ago when we had our epidemic of smallpox. Before and during the Spanish War I treated a great many cases of smallpox. And the one thing that I found that dried up those pustules—they fell off and a great many of them didn't leave scars—was to begin to saturate those patients with calcium sulphide. Then we went from that, before we had anything better in the way of bacterial vaccines, and treated scarlet fever in the same way. Take any ordinary case of scarlet fever that you meet in practice, and in five days I will defy any inspector from any board of health to tell what's the matter with the patient. The rash simply fades away. Of course, we have bacterial vaccines which probably are better now, which we didn't have years ago.

The same way with whooping cough. We have a vaccine which checks them up. Before we had that, we used to saturate the children with calcium sulphide and kept down the spasms. Even our old friend gonorrhea was very beautifully treated by saturating the patient with sulphide of calcium in the beginning.

So I began to saturate these patients with sulphide of calcium. Then keep up the local treatment, keep them clean, as we have to do with all local applications, and I think probably we have all used everything that was ever mentioned or ever heard of. Two things that have with me been most beneficial are permanganate of potash and ichthyol. You have all used them. They are old standards. But that didn't cure the cases. It didn't with me.

It is no unusual thing to pull out a whole complete cast of nasal cavity with your forceps, like a big shell. You have to put a clothes-pin on your nose, but in about two weeks' time you have all the odor gone. But you haven't stopped the scab formation, if the case is well developed.

I don't know of anything that will cure the atrophy. When the ciliated cylindrial epithelium is once destroyed, it is gone forever. After that you have a condition of sclerosis left in the nose which destroys the blood vessels and mucous glands, you get atrophy of bone and destruction of the normal mucous membrane. There is no treatment for that. That is gone. But you do stop the scab formation, and your patient gets along nicely. I have tried this out. I have been trying this out now for ten years. This is no new thing. I am not springing something on you that I have only tried on two or three cases, because I have been using it in the clinics of the Post-Graduate for ten years, and it was a long, long time before I said anything about it except to the doctors who have come in to the school there. We told them of it and showed them the cases. We tried it out with two sisters in the same family, with the same disease; one I gave sulphide of calcium, the other I didn't, all the other treatment being exactly the same. I have seen the difference in the quickness with which you stopped all of your scab formation.

Lately I have been adding to that. There has been a good deal of talk lately about the calcium content. You heard from Dr. Novak and some of them who mentioned about feeding them calcium. In addition to that, I have been giving parathyroid before they eat, about 1/20 gr. and 2 gr. of calcium sulphide after eating, and keeping up the local treatment just the same, as you

always have been doing, to see how much better these cases get along, how much quicker they heal over. This is not any experiment at all. It is only because of the results I have seen in such a large number of patients, and getting better results than I have ever been able to get with any other kind of treatment that I bring that before you as a help in treating these cases.

Dr. Jas. W. Sanders, Decatur: Dr. Clark, I don't quite understand how you use the calcium sulphide. In solution?

Dr. Clark: No.

Dr. Sanders: Just internally?

Dr. Clark: Yes. In pills.

Dr. Sanders: I thought you used the solution, too?

Dr. Clark: No.

Dr. Charles M. Robinson, Chicago: Is this treatment continuous?

Dr. Clark: You don't stop it in a week or two, any more than you do any other case.

Dr. Robinson: How long do you continue the medicine?

Dr. Clark: About six months. About two grains after eating. That's all they can stand. The younger the child the less destruction you get. After 15 years, it will take a longer time to stop the scab formation. In children you can stop it in a few weeks.

Dr. Robinson: What strength do you use?

Dr. Clark: A 4 per cent. solution of permanganate of potash, and then follow that up with a 10 per cent. solution of ichthyol and water rather than ichthyol and glycerine.

Dr. Wm. Moore Thompson, Chicago: Does your patient use the ichthyol at home?

Dr. Clark: No.

Dr. Thompson: How often do you see the patient?

Dr. Clark: Once or twice a week.

DISCUSSION

DR. CHARLES M. ROBERTSON, Chicago: I would like to mention that a very nice thing to clean out the nose is buttermilk. You take ordinary buttermilk, diluting it just enough so that it will run in easily. Buttermilk has the bacillus bulgaricus, which helps combat the rhinitis. It seems to have a salutary effect on scab formation. And then, of course, it is something they can use at home.

The Doctor says he used ichthyol in water instead of glycerine. Of course, glycerin is hydroscopic and would do more harm than good. Then powdered sugar is very soothing and there is starch enough in it so that it keeps the scabe from forming.

There is an old-timer that may be some of you or Dr. Clark may have used. Years ago Dr. Rumbold of St. Louis used hot vaseline in a spray. He took ordinary vaseline and heated it in a metal atomizer until it was hot and injected it hot into the nose by the spray. Just as soon as it strikes the mucous membrane it would solidify and you coat the whole inside of the nasal cavity with this vaseline covering which prevents scab formation.

DR. O. E. FINK, Danville: The older we get in experience in treating different diseases the more we change our opinions, and our opinion of atrophic rhinitis is one which we are very likely to change our opinion about as to the cause of treatment.

You have been taught some time back that it was always due to infection of the accessory sinuses. Now, believing that theory from men whose opinions I have had reason to respect, I made it a practice to open these accessory sinuses and I found each and every case was made worse. So, I have abandoned that procedure in the treatment of atrophic rhinits. The doctor has right here something, I think, which is a good deal better than operative treatment for this distressing condition, not only to the patient but to ourselves, because we all hate to see a bad case of atrophic rhinitis come to us for treatment. At the present time personally, I am inclined to believe what some of the older men taught that this was a specific infection viz., syphilis.

THE WESTERN PHYSIOTHERAPY ASSOCIATION

The Seventh Annual meeting of the Association will be held at the Little Theatre, Kansas City, Mo., April 16 and 17, under the presidency of Dr. L. A. Marty of Kansas City. A number of men of national reputation will be present to address the members. The medical department of U. S. A. will also be represented. Dr. T. Howard Plank of Chicago will hold a clinic at the General Hospital on the afternoon of April 16. Members of the Association desiring to present cases for diagnosis or operation may make arrangements with the secretary for these cases to have the personal attention of Dr. Plank.

The Western School of Physiotherapy

Under the direction of Dr. B. B. Grover, will hold its seventh annual session, April 9, 10 and 11, at Hotel Bellerive, and 13, 14 and 15, at the Little Theatre. This school is largely post graduate in character for physicians only, and is conductd along strictly ethical lines.

The Exhibits

Any physician who is interested in the progress of physiotherapy, cannot afford to overlook the meeting and school. Full information may be obtained by addressing the secretary, Charles Wood Fassett, M. D., 115 East 31st Street, Kansas City, Mo.

THE FORMATION OF BONE IN THE PENIS

We are reminded by Jacoby in a recent communication (*Zeitschrift für urologische Chirurgie*) that while the os penis, os priapi, or os glandis, as it is variously called, is normal in many species of mammalia, it is rare to find it in human beings, and most of the cases have been found to be due to pathological conditions, developing after trauma or syphilitic lesions. But in some other cases the os penis has developed from plastic induration.

The cases of ossification of the penis in which there is no etiological reason in evidence are regarded by some authorities as true penis bones analogous to those found in some of the lower animals. Jacoby thinks he has come upon one such case.

The article shows several photographic plates made from penis bones in the Berlin Zoological Museum. In general the penis bone is to be found only in insectivora, bats, rodents, beasts of prey, semi-apes, and apes. The bone is peculiar in size and shape for each species and Pohl says that it may be used as a species characteristic. It is always single. In the walrus it is 55 cm. long, in the whale, 2 meters. In all animals having a penis bone the bone constitutes a part of the glans, and is placed dorsally to the urethra. It form a sort of continuation of the septum between the corpora cavernosa. In man, on the contrary, the bone when present in the penis has no definite shape, it is situated in the shaft or at the root; it is an irregular flat bone formation of the tunica albuginea.

In animals it has a definite physiological function and aids in copulation, in human beings it interferes with copulation.

A CASE OF PRECOCIOUS PUBERTY

Hutchison, in the *Proceedings of the Royal Society of Medicine*, London, describes a case of a girl, aged three and a half years, who began to menstruate at seventeen months, and continued at more or less regular intervals of one month up to present time. The child's weight was 52 pounds, height 44 inches, and the secondary sexual characteristics were well developed. Though dentition was normal, the skeletal development was that of a child of thirteen or fourteen years. Aside from fits of bad temper, the child was mentally normal and bright for her age. The condition was believed to be due to ovarian hypersecretion.

Society Proceedings

ADAMS COUNTY

Meeting of February 9, 1925

The regular meeting of the Adams County Medical Society was preceded by a reception and dinner with the Woman's Auxiliary to the Adams County Medical Society in honor of Dr. Thomas McDavitt of St. Paul and was held at the Hotel Quincy at 5:45 P. M. The Society and Auxiliary members present numbered forty-three. At the conclusion of the dinner the members of the Medical Society adjourned and the Woman's Auxiliary held their meeting.

The meeting was called to order at the Chamber of Commerce at 8:20 P. M. by the President, Dr. C. D. Center.

The Chair asked for a detailed report of what the Convention Committee had been doing and Drs. Pearce, McReynolds, Stevenson and Wells reported the activities of their various committees. Dr. A. H. Bitter, reporting for the Entertainment Committee, stated that the Social Meeting in January resulted in a deficit of $36.50 to the Society. Dr. Stevenson made a motion that this deficit be paid from the Treasury. Seconded and carried. The Secretary then read communications that had been received since the December meeting as follows: A letter of resignation from Dr. J. K. Reticker; a letter of resignation from Dr. J. G. Bullett; a letter accepting Honorary Membership in the Society from Dr. Abby Fox Rooney; a letter from Dr. J. W. Pettit announcing that the Illinois Tuberculosis Association would cooperate with the Illinois State Medical Society in regard to the conduction of clinics; a letter from the Gorgas Memorial requesting the appointment of a member from our Society to represent the Gorgas Memorial on the State Governing Board. Dr. Nickerson made a motion that the Chair appoint a member to serve on this committee. Seconded and carried. (Dr. W. W. Williams appointed by Chair.)

Under head of new business Dr. Center announced the appointment of an Advisory Committee to assist him in the work of the Society during the year. This committee to consist of the following members: Drs. Harold Swanberg, Grant Irwin, E. Zimmermann, Walter Stevenson and A. H. Bitter. Dr. Nickerson made a motion that the Society confirm the action in the appointment of an Advisory Committee. Seconded and carried.

The Secretary then read the following resolution that had been unanimously approved by the Advisory Committee: "Sincerely believing that the interests of the public will be best protected thereby it is

RESOLVED: That the Adams County Medical Society does not approve of the establishing of a laboratory by the Quincy Public Health District that will exceed the scope of rendering aid in the diagnosis of communicable diseases, and of performing non-clinical tests (water, milk, sewerage, foods and beverages.) Dr. Wells made a motion that the resolution be adopted which was promptly seconded. The resolution was then discussed by Drs. Nickerson, Baker, Wells, Montgomery and Swanberg. Dr. Baker condemned the resolution stating that it would mean nothing if adopted and would only stir up public agitation; that it was unnecessary for as a member of the Quincy Public Health District Board he would promise the profession

that no clinical laboratory examinations other than pertained to communicable diseases would be performed. It was pointed out in apposition that the present Public Health Officer at the special meeting of the Society held last month stated that all kinds of clinical laboratory tests would be made by the proposed laboratory; that if such would be the case it would be another step toward "State Medicine;" it was also a fact that it was uncertain if Dr. Baker would always be a member of the Board and that he might not be elected at the Spring election. Dr. Wells then withdrew his motion and made a motion that the resolution be tabled. Seconded by Dr. Baker. The motion to table the resolution was lost. Drs. Center, Swanberg and Koch spoke in favor of the adoption of the resolution and Dr. Koch made a motion that the original resolution be adopted. Seconded by Dr. E. Zimmermann. Dr. Wells then offered a substitute resolution as follows:

"RESOLVED: That the Adams County Medical Society go on record as favoring the establishing of a laboratory by the Quincy Public Health District for the examination of water, milk, sewerage, foods, beverages and the diagnosis of communicable diseases." This was seconded by Dr. Baker and carried. The Secretary then read the following resolution that had been unanimously adopted by the Advisory Committee. Because of the newspaper publicity that has appeared in connection with the proposed changes in the laboratory of the Quincy Public Health District it is hereby.

"RESOLVED: That the Adams County Medical Society extend a vote of confidence in Dr. Frank Cohen for his ability as a clinical pathologist." Dr. Jurgens made a motion that the resolution be adopted. Seconded by Dr. Baker and carried without opposing vote.

The Secretary then asked the pleasure of the Society in regard to the conduction of the *Bulletin* during the coming year and that if same was desired that it would be necessary to expend a hundred dollars for the year as was done last year. Dr. Nickerson made a motion that the *Bulletin* be conducted again as during the past year and that a voucher be drawn for $100, to cover the necessary expense. Seconded and carried. The Secretary then presented a few bills that had occurred since the December meeting and Dr. Nickerson made a motion that these bills be allowed and a voucher drawn for the amount necessary to pay same. Seconded and carried. The applications for membership into the society by Dr. Tully Snider of Liberty and Dr. C. R. Hecox of Golden were read and ordered to be turned over to the Board of Censors for consideration.

The Chair then called upon the guest of the evening, Dr. Thomas McDavitt of St. Paul, Minn., Trustee of the American Medical Association to address the society on the "Workings of the American Medical Association." Dr. McDavittt described with much detail the various activities of the A. M. A. and also warmly commended our *Bulletin*, stating that it was one of the best Bulletins received at the A. M. A. Headquarters from any county Medical Society. The discussion of Dr. McDavitt's paper was conducted by Drs. Nickerson, Wells, Koch, Williams, being finally concluded by Dr. McDavitt. Dr. J. W. Blan then presented an interesting case report of a case of Eclampsia occurring in his practice. (Published in March *Bulletin*). This was discussed by Drs. Wells, Montgomery, Werner and finally closed by Dr. Blan. Dr. J. H. Blomer then read an interesting paper on, "Chlorine in Respiratory Disorders." (Published in March *Bulletin*.) This was discussed by Drs. McReynolds, Koch and finally closed by Dr. Blomer. A motion for adjournment was then carried about 10:40 P. M.

HAROLD SWANBERG, M. D.
Secretary.

CHRISTIAN COUNTY

The Christian County Medical society met at the Antlers Hotel, Taylorville, February 3, where eighteen of us sat down to a very enjoyable six o'clock dinner and passed the hour in a get-together-social time and then repaired to the upper parlor and held the business part of the meeting.

The minutes of the last meeting were omitted and the election of officers resulted in the following list: president, Dr. S. B. Herdman, Taylorville; vice-president, Dr. Jesse P. Simpson, Palmer; secretary-treasurer, Dr. D. D. Barr, Taylorville (16th time); delegate, Dr. G. L. Armstrong, Taylorville; alternate, Dr. T. A. Lawler, Taylorville; legal committee, Dr. J. N. Nelms, Taylorville; public health, Dr. J. H. Miller, Pana, and Dr. W. H. Mercer, Taylorville; censors: Drs. T. A. Lawler, W. H. Mercer, and J. N. Nelms, all of Taylorville.

No other business being before the meeting the scientific part of the program was opened by Dr. R. C. Danford, of Pana, who presented the case history of a case of carcinoma which had many peculiarities among which was the almost fatal termination of the patient at operation and this followed by such improvement that the patient seemed well on the road to recovery and later went the way they all do. This report led to the general discussion of cancer which was most interesting and profitable and in which nearly all the members took a part.

Following this Dr. S. B. Herdman opened the discussion of goiter under the title of "Lugol Solution in the treatment of Goiter." In this discussion the doctor gave his experience in the one case (of lugol solution) and then went on to give a very interesting discussion of goiter and the most approved treatment. Also mentioned the general opinions as expressed at the Bloomington congress. Others joined in the discussion and the meeting lasted until a late hour and the members left feeling that we had enjoyed one of the most profitable meetings that we have had for a long time.

D. D. BARR, *Secy.*

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Meeting of February 11, 1925

Pneumonia, with an apparently successful treatment.
Cold the Chief Exciting Cause.....Bernard Maloy

Recent Advances in the Specific Therapy of Labor Pneumonia. Lantern Slides.....
Russell L. Cecil, New York, N. Y.
Discussion: Frederick Tice, Gordon G. Burdick.

Meeting of February 18, 1925

1. Diagnostic and Therapeutic X-Radiation in Pregnancy....W. A. Newman Dorland and M. J. Hubeny
Discussion—B. C. Cushway
2. The Classification of Thyroid Disturbances from the Viewpoint of the General Practitioner.....
.....James H. Hutton
Discussion
3. Injuries to Blood Vessels and Their Management
.....R. W. McNealy
Discussion—C. W. Hopkins, Karl A. Meyer

Meeting of February 25, 1925

Diagnostic Clinic

1. Surgical Treatment of Gastric Ulcer. Demonstration of Patients.....Karl A. Meyer
Discussion, Frederick Tice
2. The Clinical End Results of Partial Gastrectomy for Gastric and Duodenal Ulcer.. Alfred A. Strauss
Discussion, Leon Bloch

Marriages

HARRY BAKWIN to Dr. Ruth Mae Morris, both of Chicago, at Paris, France, February 2.

MILTON MANDEL to Miss Betty E. Snell, both of Chicago, February 12.

CARL APPLE to Miss Minnie Kaplan, both of Chicago, February 8.

JAMES FRANCIS CURRY to Miss Winifred K. Baggiore, both of Chicago, Dec. 6, 1924.

EDWIN B. GODFREY to Miss Jane Raymond, both of Chicago, Dec. 19, 1924.

FRIEDA HIRSCHBERG to Mr. Harry M. Lawrence, both of Chicago, January 3.

Personals

Dr. Herbert H. Christensen, Wausau, Wis., addressed the Chicago Surgical Society, February 6, at St. Luke's Hospital on "Paralysis of the Deltoid Following Shoulder Injuries."

Dr. Ralph A. Kinsella, professor of medicine, University of St. Louis School of Medicine, St. Louis, addressed the Rock Island County Medical Society, East Moline, January 15, on "Chronic Rheumatism."

Dr. James B. Herrick, president of the Chicago Association for the Prevention and Relief of Heart Disease, addressed that association, February 19, at the City Club on "Work of the Association," and Dr. Charles G. Farnum on "The Cardiac in Industry."

Dr. Elmer L. Kenyon addressed the Chicago Laryngological and Otological Society, February 2, Great Northern Hotel, on "Speech Complications in Certain Cases with Unusual Palates—Exhibition of Patients."

Dr. Carl A. Hedblom, professor and head of the department of surgery, University of Wisconsin Medical School, Madison, addressed the Winnebago County Medical Society, Rockford, January 20, on "Surgery of the Breast."

Dr. George W. Duvall, Owensboro, Ky., and for the last four years director of the Daviess (Ky.) County Health Department, has been appointed superintendent of the Central Free Dispensary at Rush Medical College.

Dr. Thomas S. McDavitt, St. Paul, Minn., addressed the Adams County Medical Society, Quincy, February 8, on "The American Medica Association," of which for years he has been a trustee. A reception and dinner were given in honor of Dr. McDavitt preceding the meeting.

Dr. Harold B. Wood, director of health, Bloomington, has tendered his resignation, effective February 7, to accept a position in the State Health Department of Pennsylvania. Dr. Wood will have charge of the investigation and control of contagious diseases and will be located at Harrisburg.

Dr. G. W. Boot has been appointed Bronchocopist to the Illinois Eye and Ear Infirmary.

Dr. J. S. Nagel recently addressed the staff of St. Mary's Hospital of Tucson, Ariz., on "The Clinical Significance of Blood in the Urine."

Dr. Frank Smithies, Professor of Medicine, School of Medicine, University of Illinois, delivered the annual Joyce Foundation lectures before the Academy of Medicine, Portland, Oregon, January 7 and 8, upon the following topics: "The Newer Conception of Peptic Ulcer, with Results Following Non-Surgical Treatment of 470 Cases by the 'Physiological Rest' Method" and "Infection as an Etiological Factor in So-Called 'Pernicious Anemia' and Its Significance With Regard Treatment."

News Notes

—The appellate court, February 3, reversed the order of the circuit court judge, which compelled the health commissioner of Chicago to issue a license for a birth control clinic.

—At the annual meeting of the Chicago Ophthalmological Society, January 19, Dr. Charles P. Small was elected president; Dr. M. H. Lebensohn, vice-president, and Dr. Robert H. Buck, secretary-treasurer.

—At a meeting of the Chicago Tuberculosis Society, February 12, at the Municipal Tuberculosis Sanitarium, Dr. Henry Kennon Dunham, Cincinnati, and his associate, Dr. Vera V. Norton, read a joint paper on "The Roentgen Ray as an Aid in Directing Treatment of Pulmonary Tuberculosis."

—Stanley A. Gracey and Clement Furgeson, Mount Carmel, unlicensed chiropractors, were recently found guilty by a jury, fined $400 and costs and sentenced to six months on the penal farm at Vandalia. Kitty Gracey, Mount Carmel, an unlicensed chiropractor, was found guilty by a jury and fined $400 and costs.

—The Belleville Trades and Labor Assembly passed a resolution February 3, which was, in part, as follows:

Whereas, All well regulated cities protect the health of the people, and especially of the children, by the enactment of ordinances on sanitation, and protect citizens from impure and contaminated food products, be it

Resolved, That in the interest of public health the Belleville Trades and Labor Assemby, in meeting assembled, appeals to the city council to enact an ordinance providing that all milk used for human consumption in the city must be pasteurized before being offered for sale, and providing a penalty so severe that no person or firm will attempt its violation, and thus prevent a possible typhoid or other epidemic among the children.

—At a recent conference of committees representing the council of the Illinois State Medical Society and the Illinois Society for Crippled Children, in Chicago, the joint committee agreed, after discussion, to recommend to its respective societies that:

1. The Illinois State Medical Society provide an advisory council which shall consist of five members in good standing, whose duty it shall be to cooperate with, counsel and advise the executives and board of directors of the Illinois Society for Crippled Children on all methods of procedure in medical matters.

2. Any work undertaken under this proposal shall avoid the professional aggrandizement of any individual or group of individuals; and it shall studiously avoid the pauperization of the public.

3. If clinics be held in any locality in Illinois, they shall be held in conjunction with the local component unit of the Illinois State Medical Society.

—The excess of births over deaths in this state last year was 59,972, a net increase in population sufficient to people a city the size of Springfield, or the seven counties of Brown, Calhoun, Edwards, Hardin, Henderson, Kendal and Putnam, the state health director says. The favorable difference between the birth and death rate per thousand population has exceeded that of last year (8.8) only twice in the last decade. For the last four years the average death rate of Illinois was 11.4 and for the preceding four years 13.8—a difference in rate that means a saving of almost 45,000 lives in four years. For the fourth consecutive year Chicago has reported a lower death rate than the remainder of the state, reversing the condition which prevailed during all previous years.

—St. Clair County Medical Society elected the following officers for 1925: president, I. L. Foulon; president-elect, W. F. McNary; vice-president, E. W. Cannady; secretary, O. M. McCann; advertising manager, E. C. Spitze; assistant advertising manager, W. Wilhelmj; medico legal advisor, J. H. Fulgham; board of censors—H. M. Voris, J. Beykirch, E. H. Lane, all of East St. Louis, and A. E. Hausing of Belleville, treasurer.

—Coles-Cumberland County Medical Society elected the following officers for 1925: president, R. H. Craig, Charleston; vice-president, Norman Starr, Charleston; secretary and treasurer, E. E. Richardson, Mattoon; delegate, C. E. Morgan, Mattoon; board of censors, H. A. Schaffer.

—The American Urological Association, our largest national urological association, meets in

St. Louis, May 21, 22 and 23, with headquarters at the Chase Hotel. Mornings will be devoted to clinics in the various hospitals and the afternoons to the scientific session which will be conducted in the ball room of the Chase Hotel. For detailed information write John R. Caulk, M. D., 723 University Club Building, St. Louis, Mo.

—The Chicago Council of Medical Women will meet at 8 p. m., March 24, at the City Club of Chicago. Doctors Stasey and Offut from the Mayo Clinic will participate in the Symposium on Hemorrhage as related to Gynecology. All members of the Chicago Medical Society are invited.

—The American Board of Otolaryngology will hold its first examination during the meeting of the American Medical Association in Atlantic City, May 25 to 28.

According to the rules of the Board, applicants are divided into three classes.

Class 1. Those who have practiced Otolaryngology ten years or more.

Class 2. Those who have practiced Otolaryngology five years and less than ten years.

Class 3. Those who have practiced Otolaryngology less than five years.

The type of examination is different for each class.

The Secretary, Dr. H. W. Loeb, announces that thus far over three hundred applications have been made.

DEATHS

David Wilson Graham, for many years clinical professor of surgery, Rush Medical College, Chicago, a Fellow A. M. A., died at his home, February 9. He was born in Henderson County, Illinois, in 1843, and after graduation from Monmouth College, attended the Bellevue Hospital Medical College, New York, receiving his M. D. in 1872. He was demonstrator of anatomy at the Women's Medical School of Northwestern University, Chicago, 1874-1877, professor of anatomy, 1877-1882, and professor of surgery, 1883-1898. For more than forty years, Dr. Graham was connected with Rush Medical College, and since its founding with the Presbyterian Hospital. He was president of the Illinois State Medical Society, 1894-1895; of the Chicago Medical Society, 1885-1886; and of the Chicago Surgical Society, 1906-1907, Dr. Graham was a member of the American Association of Obstetricians and Gynecologists, and of the Chicago Pathological Society, a Civil War veteran, formerly surgeon to the Cook County Hospital, the Central Free Dispensary, and consulting surgeon to the Evanston Hospital. He served the American Medical Association as a trustee from 1894 to 1897. A son, Dr. Evarts A. Graham, is professor of surgery in Washington University Medical School, St. Louis. Dr. Graham was a man of rugged character with a characteristic humor and a striking personality.

Adam Grim, Franklin Grove, Ill.; Rush Medical College, Chicago, 1881; a Fellow A. M. A.; aged 74; died, January 10, at the Lincoln Hospital, Rochelle, following an appendectomy.

Frank Guillaume, Chicago; Chicago Homeopathic Medical College, 1890; aged 68; died, February 8, of dilatation of the heart.

John Wallace Hewetson, Lyons, Ill.; Hahnemann Medical College and Hospital, Chicago, 1897; member of the Illinois State Medical Society; served in the M. C., U. S. Army, during the World War; aged 52; died, January 23, at Highland Park, Mich.

Caroline B. Hopkins, Glencoe, Ill.; Northwestern University Woman's Medical School, Chicago, 1897; a Fellow A. M. A.; aged 52; died, February 12, at the Ravenswood Hospital, Chicago, of obstructive jaundice and uremia.

Charles Josiah Lewis, Chicago; Rush Medical College, Chicago, 1865; member of the Illinois State Medical Society; formerly professor of neurology, College of Medicine and Surgery, Chicago; aged 86; died, February 12, of valvular heart disease and chronic bronchitis.

David Warren Miller, Gilman, Ill.; Jefferson Medical College of Philadelphia, 1880; president of the board of education; aged 70; died, January 18, of cerebral hemorrhage.

Loise Newton Miller, Moline, Ill.; Hahnemann Medical College and Hospital, Chicago, 1885; aged 63; died, January 16, of cerebral hemorrhage.

Nellie Vaughn Forrest Tucker, Chicago; Hering Medical College, Chicago, 1899; aged 60; died January 29, of carcinoma.

George B. Warne, Chicago; Hering Medical College, Chicago, 1897; aged 74; died, January 22, of acute dilatation of the heart.

Francis O. Harrison, Christopher, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 78; died, January 29.

John Franklin Keefer, Sterling, Ill.; Rush Medical College, Chicago, 1881; member of the Illinois State Medical Society; formerly proprietor of the Keefer Hospital; aged 66; died, February 2, of cerebral hemorrhage.

Floyd Albert Smith, Canton, Ill.; University of Illinois College of Medicine, Chicago, 1913; member of the Illinois State Medical Society; formerly county coroner; aged 36; died, January 27, following a long illness.

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